

# **UPGRADING AND TECHNICAL EFFICIENCY IN KENYAN GARMENT FIRMS: DOES INSERTION IN GLOBAL VALUE CHAINS MATTER?**

**By**

**PAUL KURIA KAMAU**

**A Thesis Submitted in Fulfilment of the Requirements for the Award of the Degree  
of Doctor of Philosophy in Development Studies of the University of Nairobi.**

**Institute for Development Studies  
University of Nairobi**

University of NAIROBI Library



0501642 3

**12<sup>TH</sup> NOVEMBER 2009**

## DECLARATION

I hereby declare that this thesis is my original work and has not been submitted either in this or a different form to this University or any other for a degree.



Signed: \_\_\_\_\_  
**Paul Kuria Kamau**

Date: 18 NOVEMBER 2009

## ACADEMIC SUPERVISORS

This thesis has been submitted for examination with our approval as University Supervisors

Signed: Dorothy Mc Cormick  
**Prof. Dorothy McCormick**  
Institute for Development Studies  
University of Nairobi

Date: 18 November 2009

Signed: Peter Kimuyu  
**Prof. Peter Kimuyu**  
School of Economics  
University of Nairobi

Date: Nov 20, 2009

## ABSTRACT

*In value chains discourse, a widely held proposition is that industrial upgrading (a rapid build up of industrial production capabilities) in developing countries occurs mostly when local producers participate in global value chains (GVCs). It is argued that insertion in GVC is a vital step for industrial upgrading because it puts local firms on a potentially dynamic learning curve. This study explores the validity of this argument by using Kenyan garment data to examine the upgrading potential of firms operating not only within GVC, but also within domestic and regional value chains. To investigate these issues, this thesis combines quantitative and qualitative methods to conduct a systematic comparison of the different types of value chains and corresponding types of upgrading in the garment industry. Data used in this study was collected in 2006 from forty-four (44) medium- and large-scale garment manufacturing firms in Kenya. The survey was supplemented by ten (10) case studies and 15 key-informant interviews.*

*The garment industry in Kenya has been earmarked for industrial development due to several factors that differentiate it from Kenya's other manufacturing sectors. Unlike traditional agricultural commodities, the garment industry has potential for diversification into export categories with greater value addition. The industry also plays a critical role in employment creation, particularly for low skilled workers, has low capital outlay, and integrates the country into the global trade arena of manufactures.*

*The main finding of this study is that the upgrading potential for firms operating in a value chain is dependent on the nature of governance in that chain. Furthermore, because of the governance in GVC, quasi hierarchical, garment firms in GVC experience extensive process and product upgrading but little functional upgrading. In contrast, functional upgrading for firms operating in market-based chains is high and process and product upgrading moderate. Thus, the findings do not support the widely held perception that upgrading occurs mainly to firms inserted in GVC. Moreover, firms that simultaneously participate in domestic and export ('multi-chain') value chains demonstrate higher potential upgrading than those specialising in a single value chain. In this case, firms use knowledge and experience gained in the domestic market to launch their own brands in the export market.*

*In addition, the technical efficiency of this industry was estimated using the stochastic frontier analysis (SFA). The SFA results reveal that garment manufacturing firms in Kenya are technically efficient with a mean score of 83 per cent. Moreover, 'export' and 'firm size' variables have a positive and statistically significant effect on technical efficiency in the garment industry. More importantly, firms in multiple value chains have a higher technical efficiency score than the average score for the entire industry. This finding appears to be consistent with the learning-by-exporting hypothesis.*

*Drawing from these findings, the study concludes that the future of the garment industry in Kenya lies in the hands of 'locally owned' firms which depend on market-based trajectories to upgrade. These firms, as our findings suggest should be encouraged to increase their participation in the export markets using their own branded garments. The importance of functional upgrading supported by branding, marketing and design provide firms with strategic options that decrease vulnerability associated in global value chains.*

## ACKNOWLEDGEMENTS

The completion of this research is an ultimate outcome of years of labourious efforts which have benefited from the support and sacrifices of many individuals and institutions. It is my great pleasure to express my gratitude to all those who positively influenced this work. First, I thank God who gave me strength, courage and guidance throughout the entire period of my study.

Secondly, I would like to sincerely thank my academic supervisors: Professor Dorothy McCormick of the Institute for Development Studies and Professor Peter Kimuyu of the School of Economics, University of Nairobi for excellent intellectual guidance and support throughout the period of this study. I benefited immensely from their rich knowledge and experience on issues of clothing, value chain analysis and technical efficiency -- without which this work would not have been successfully completed. They were wholly committed to this research and were always available for consultations even beyond normal office hours. In addition, they committed a lot of their valuable time to read many drafts of my work and offered very constructive comments. Outstandingly, I would like to express my heartfelt gratitude to Prof. McCormick in person, for introducing and incorporating me to international research forums, "African Clothing and Footwear Research Network" and "Asian Drivers" just to mention but a few. My participation in the forums not only enriched my understanding of issues concerning garment manufacturing firms but also enabled me to write scholarly works on the subject matter. Her interest and concerns not only about my academic but also personal life made my work much easier than I had anticipated. I was indeed very privileged to have Prof. McCormick as my supervisor and also as mentor with whom I started my scholarly career.

Special thanks to all scholars at the IDS, University of Nairobi for their encouragement, cooperation and guidance. I am also grateful to the following for their contribution at various stages of this study: my office mate Mr. John Njoka, Prof. Mohamud Jama, Dr. Karuti Kanyinga, Dr. Mary Kinyanjui, Prof. Patrick Alila, Prof. Charles Okidi, and Prof. Masao Yoshida. I cannot express enough 'thanks' all my colleagues at IDS for the tremendous moral and material support that I received from each of them during my studies, particularly being among the first PhD students in the institute.

I am also equally grateful to Dr. Diana Ngui of Kenyatta University who tirelessly worked with me in the modelling and econometric analysis of my data. She not only introduced me to a wide range of modelling and estimation of technical efficiencies but also availed the most recent literature on efficiency. Special thanks to Ann Weston of the North-South Institute for organising, facilitating and accompanying me during my key-informant interviews while I was in Canada. A special word of appreciation goes to members of ACFRN; Prof. Raphael Kaplinsky, Dr. Peter Gibbon, Prof. Mike Morris, Dr. Andrew Mbwambo, and Prof. Tegegne Gebre-Egziabher for useful insight, advice and encouragement when I was undertaking this work. I also thank Sunday Khan, my predecessor at NSI (Helleiner-Visiting Research Fellow) for consistent support during my study period.

My intentions to pursue further academic qualification were made a reality by the scholarship from German Academic Exchange Services (the DAAD) and also a fee waiver by the University of Nairobi. Without this generous financial support, the completion of this thesis would not have been possible. The University of Nairobi also granted me study leave, which enabled me to undertake this research. I am also grateful to the North-South Institute (NSI) in Ottawa Canada, which funded the carrying out of additional key-informant interviews and preliminary data analysis as well as my stay in Canada through Helleiner Research Fellowship programme; and ACFRN through DelPHE research project for sponsoring my visit to Mzumbe University where final writing of this thesis was conducted. I am also grateful to the Centre for Development Research (now Danish Institute for International Studies) through the efforts of Dr. Poul Ove Pedersen and Dr. Peter Gibbon, for the fellowship that enabled me to conceptualise this study. Special thanks go to Mzumbe University - through the Vice Chancellor Prof. Joseph Kuzilwa for hosting me during the final stage of my writing this thesis. The United Nations University – Institute of Advanced Studies (UNU-IAS) in Japan contributed immensely through the PhD Fellowship programme.

My fieldwork involved extensive interviewing of entrepreneurs and institutions in Kenya and abroad. I am grateful to all those respondents that shared with me their experiences and knowledge, those that even showed me their books and generally spent hours talking to me, walking me through their production process and introducing me to their employees. It was their hospitality, support and help that greatly enriched this study. Special thanks also go to Isabel Munandi, Raphael Muhoho, Jackson Kayaga, Biko Chacha, Isaac Macharia, Jeremiah Omabere, John Mugo, Eunice Njuguna, Eric Mbugua, Grace Wang'ombe and Stephen Waithaka for their selfless research assistance. They were committed to this study and worked tirelessly with me. Judith Ndirangu assisted with secretarial skills. I am grateful to Innocent Mwangi, Maryanne Muchene and Isabel Munandi who were instrumental in editing and proof-reading of this thesis.

The Kamau family and all my relatives were very patient and encouraging throughout the years. In particular, I am indebted to my brother James Kamau for his invaluable moral and material support especially to my family, particularly when I was studying out of the country. My parents John and Damaris Kamau sacrificed a lot to educate and mould me to what I am today. For all your toiling, I say thank you very much. I thank all my friends much for prayers and support. To my friends and colleagues: Lucas Njoroge, Moses Muriithi, James Njeru, Simon Gichuki, Edwin Mathu and Peter Gatere thank you very much for your support during the process of undertaking this PhD programme.

My final and special words of appreciation are to my wife Maryanne who shared my trials and tribulations while at the same time providing essential emotional, intellectual and moral support without which completion of this thesis would have been an uphill task. I thank you for patiently encouraging me throughout the PhD process and for urging me on. To My children Ryan and Ethan who had to endure my absence when I was away from home carrying out this study: *asante sana*.

Lastly, I remain entirely responsible any errors, omissions, or misinterpretations that might be observed in this thesis.



## LIST OF ACRONYMS AND ABBREVIATIONS

<b>ACFRN</b>	African Clothing and Footwear Research Network
<b>ACP</b>	African Caribbean and Pacific
<b>AGOA</b>	African Growth Opportunity Act
<b>ATC</b>	WTO Agreement on Textiles and Clothing
<b>CMT</b>	Cut-Make and Trim
<b>COMESA</b>	Common Market for Eastern and Southern Africa
<b>EAC</b>	East African Community
<b>EPZ</b>	Export Processing Zones
<b>EPC</b>	Export Promotion Council
<b>EU</b>	European Union
<b>FDI</b>	Foreign Direct Investment
<b>FOB</b>	Free on Board
<b>GATT</b>	General Agreement on Tariffs and Trade
<b>GDP</b>	Gross Domestic Product
<b>GSP</b>	Generalised System of Preferences
<b>GVC</b>	Global Value Chain
<b>IDS</b>	Institute for Development Studies
<b>ILO</b>	International Labour Organisation
<b>IMF</b>	International Monetary Fund
<b>ITC</b>	International Trade Centre
<b>PRSP</b>	National Poverty Reduction Strategy Paper
<b>ILO</b>	International Labour Organisation
<b>IMF</b>	International Monetary Fund
<b>JETRO</b>	Japanese External Trade Organisation
<b>KAM</b>	Kenya Association of Manufacturers
<b>KAMEA</b>	Kenya Apparel Manufacturers and Exporters Association
<b>KRA</b>	Kenya Revenue Authority
<b>KIPPRA</b>	Kenya Institute for Public Policy and Research Analysis
<b>KNBS</b>	Kenya National Bureau of Statistics
<b>LDCs</b>	Least Developed Countries
<b>LTA</b>	Long Term Agreement
<b>MFA</b>	Multifiber Arrangement
<b>MNE</b>	Multinational Enterprise
<b>MSEs</b>	Micro and Small Enterprises
<b>MUB</b>	Manufacturing-under-bond
<b>NGO(s)</b>	Non Government Organisation(s)
<b>NIC</b>	Newly Industrialised Countries
<b>OBM</b>	Own Brand Manufacturing
<b>ODM</b>	Own-Design and Manufacturing
<b>OECD</b>	Organisation for Economic Cooperation and Development
<b>OEM</b>	Original Equipment Manufacturing
<b>PRSP</b>	National Poverty Reduction Strategy Paper
<b>RPED</b>	Regional Programme on Enterprise Development
<b>ROO</b>	Rules of Origin
<b>SME(s)</b>	Small and Medium Enterprise(s)
<b>SSA</b>	Sub-Saharan Africa
<b>T&amp;C</b>	Textiles and Clothing
<b>UNIDO</b>	United Nations Industrial Development Organisation
<b>USA</b>	United States of America
<b>USAID</b>	United States Agency for International Development
<b>VAT</b>	Value Added Tax
<b>VER(s)</b>	Voluntary Export Restraint(s)
<b>WB</b>	World Bank
<b>WTO</b>	World Trade Organization

# TABLE OF CONTENTS

<b>DECLARATION .....</b>	<b>i</b>
<b>ABSTRACT .....</b>	<b>ii</b>
<b>ACKNOWLEDGEMENTS .....</b>	<b>iii</b>
<b>DEDICATION .....</b>	<b>v</b>
<b>LIST OF ACRONYMS AND ABBREVIATIONS .....</b>	<b>vi</b>
<b>TABLE OF CONTENTS .....</b>	<b>vii</b>
<b>LIST OF FIGURES .....</b>	<b>xv</b>
<b>LIST OF BOXES .....</b>	<b>xv</b>
<b>CHAPTER 1 .....</b>	<b>1</b>
<b>INTRODUCTION .....</b>	<b>1</b>
<b>1.1 Background to the Study .....</b>	<b>1</b>
<b>1.2 Statement of the Research Problem.....</b>	<b>5</b>
<b>1.3 Research Questions .....</b>	<b>7</b>
<b>1.4 Objectives of the Study .....</b>	<b>8</b>
<b>1.5 Significance of the Study.....</b>	<b>8</b>
<b>1.6 Organization of the Study.....</b>	<b>10</b>
<b>CHAPTER 2.....</b>	<b>11</b>
<b>KENYAN GARMENT INDUSTRY IN GLOBAL CONTEXT .....</b>	<b>11</b>
<b>2.1 Introduction.....</b>	<b>11</b>
<b>2.2 Global Policies Governing Trade in Textiles and Clothing .....</b>	<b>12</b>
2.2.1 The Beginning of Protectionism in Textiles and Clothing .....	12
2.2.2 Short Term Arrangement 1961-1962 .....	15
2.2.3 Long Term Arrangement (LTA) 1962-1973 .....	16
2.2.4 The Multi-Fiber Arrangement (MFA).....	19
2.2.5 The Agreement on Textile and Clothing .....	21
2.2.6 Integration of Garment Trade into the WTO.....	24

<b>2.3</b>	<b>African Growth and Opportunity Act (AGOA)</b> .....	<b>25</b>
2.3.1	Origin and Enactment of AGOA .....	26
2.3.2	AGOA's Wearing Apparel Provisions .....	28
2.3.4	Impact of AGOA on Trade between the US and Kenya.....	30
<b>2.4</b>	<b>Regional Trade Policies and the Kenyan Garment Industry</b> .....	<b>33</b>
<b>2.5</b>	<b>Domestic Trade Policies and the Garment Industry in Kenya</b> .....	<b>34</b>
2.5.1	Garment Industry under the Import-Substitution Industrialisation Policy .....	35
2.5.2	Garment Industry under the Export-Promotion Industrialisation Policy .....	36
<b>2.6</b>	<b>Current Profile of the Garment Industry in Kenya</b> .....	<b>47</b>
2.6.1	Production Activities in the Garment Industry .....	50
2.6.2	Sourcing of Raw Materials and Machinery .....	52
2.6.3	Nature of Employment and Labour Issues .....	53
2.6.4	Ownership Structure in the Kenyan Garment Industry .....	56
2.6.5	Market for Garment Products .....	57
<b>2.7</b>	<b>Regulatory and Institutional Framework</b> .....	<b>59</b>
2.7.1	Government Ministries.....	59
2.7.2	Public Sector Agencies.....	59
2.7.2	Private Sector Agencies.....	60
2.7.2	Legal Structures.....	61
<b>2.8</b>	<b>Conclusion</b> .....	<b>62</b>
<b>CHAPTER 3</b> .....		<b>64</b>
<b>THEORETICAL AND EMPIRICAL LITERATURE REVIEW</b> .....		<b>64</b>
<b>3.1</b>	<b>Introduction</b> .....	<b>64</b>
<b>PART 1: THEORETICAL LITERATURE REVIEW</b> .....		<b>64</b>
<b>3.2</b>	<b>Global Value Chain Analysis</b> .....	<b>65</b>
3.2.1	Conceptualising a Value Chains.....	65
3.2.2	Dimensions of Value Chains .....	67
3.2.3	Governance Structure in Value Chains .....	71
3.2.4	Upgrading in Value Chains .....	78
3.2.5	Importance of GVC Analysis in Upgrading in Kenya Garment Firms .....	81

<b>3.3</b>	<b>Other Theories Related to GVC (Firm, Institutions &amp; Business Systems):</b>	<b>82</b>
3.3.1	Theory of the Firm .....	82
3.3.2	New Institutional Economics .....	83
3.3.3	Business Systems Theory .....	85
<b>3.4</b>	<b>Technical Efficiency Theory .....</b>	<b>88</b>
3.4.1	Introduction .....	88
3.4.2	Technical Efficiency Components.....	90
3.4.2	Specification of Technical Efficiency .....	92
<b>3.5</b>	<b>Upgrading in Global Value Chains.....</b>	<b>98</b>
3.5.1	Consensus on Product and Process Upgrading.....	100
3.5.2	Is Functional Upgrading Possible?.....	106
3.5.3	The Role of Domestic Value Chains in Upgrading .....	109
3.5.4	Is Participation in Multiple Chains Superior to Single Chain Upgrading?.....	112
<b>3.6</b>	<b>Does Technical Efficiency Always Result in Upgrading in Kenya?.....</b>	<b>113</b>
<b>3.7</b>	<b>What does the MFA Termination mean for the Garment Industry?.....</b>	<b>116</b>
<b>3.8</b>	<b>Summary of the Relevant Studies in Kenya's Garment Industry .....</b>	<b>118</b>
<b>3.9</b>	<b>Research Gaps and the Contributions of My Studies .....</b>	<b>121</b>
<b>CHAPTER 4.....</b>		<b>124</b>
<b>CONCEPTUAL FRAMEWORK.....</b>		<b>124</b>
<b>4.1</b>	<b>Introduction .....</b>	<b>124</b>
<b>4.2</b>	<b>Conceptual Framework .....</b>	<b>124</b>
<b>4.3</b>	<b>Analytical Framework: Technical Efficiency .....</b>	<b>128</b>
4.3.1	Modelling of Technical Efficiency.....	128
4.3.3	Estimation of Elasticities.....	133
4.3.4	Likelihood Ratio Test.....	133
4.3.5	Estimation of Returns to Scale .....	134
4.3.6	Confidence Intervals.....	134
<b>4.4</b>	<b>Conceptual Propositions and Hypotheses .....</b>	<b>135</b>

<b>CHAPTER 5</b> .....	<b>137</b>
<b>METHODOLOGY</b> .....	<b>137</b>
<b>5.1 Introduction</b> .....	<b>137</b>
<b>5.2 Research Methodology and Design</b> .....	<b>137</b>
<b>5.3 Research Design in our Study</b> .....	<b>138</b>
5.3.1 Selection of Study Area.....	139
5.3.2 Study Population and Sample.....	140
5.3.3 Unit of Analysis .....	141
5.3.4 Screening Survey – Identification of Firms.....	141
5.3.5 Procedure for Data Collection .....	144
<b>5.4 Data Collection Methods and Instruments</b> .....	<b>145</b>
5.4.1 Firm-Level Survey - Questionnaire.....	145
5.4.2 Key-Informant Interviews .....	146
5.4.3 Case Study Method .....	148
<b>5.5 Operationalisation of Key Variables</b> .....	<b>150</b>
<b>5.6 Data Presentation and Analysis</b> .....	<b>156</b>
5.6.1 Data Cleaning and Coding.....	156
5.6.2 Data Analysis .....	156
<b>5.7 Data Reliability and Validity</b> .....	<b>157</b>
<b>5.8 Conclusion</b> .....	<b>158</b>
<b>CHAPTER 6</b> .....	<b>159</b>
<b>CHARACTERISTICS OF THE KENYAN GARMENT FIRMS</b> .....	<b>159</b>
<b>6.1 Introduction</b> .....	<b>159</b>
<b>6.2 Legal Status of Garment Firms in Kenya</b> .....	<b>159</b>
<b>6.3 Location and Export Platforms</b> .....	<b>160</b>
6.3.1 Location of the Garment Firms .....	160
6.3.2 Export Platforms .....	161
<b>6.4 Firms' Age, Size and Labour Issues</b> .....	<b>162</b>
6.4.1 Age of Garment Enterprises in Kenya.....	162
6.4.2 Firm Size Distribution .....	164

6.4.3	Labour and Gender Issues .....	166
<b>6.5</b>	<b>Capitalisation and Ownership of Garment Firms in Kenya .....</b>	<b>169</b>
6.5.1	Distribution and Sources of Capital.....	169
6.5.2	Ownership Structure of Garment Firms .....	172
<b>6.6</b>	<b>Production Activities, Subcontracts and Machinery Acquisition .....</b>	<b>173</b>
6.6.1	Garment Products .....	173
6.6.2	Subcontracting in the Garment Industry.....	175
<b>6.7</b>	<b>Market Destinations .....</b>	<b>179</b>
<b>6.8</b>	<b>Management Structure and Skills Availability .....</b>	<b>184</b>
6.8.1	Managerial Skills.....	184
6.8.2	Labour Skills and Productivity.....	186
<b>6.9</b>	<b>Constraints Facing Garment Enterprises in Kenya.....</b>	<b>187</b>
<b>6.10</b>	<b>Conclusion .....</b>	<b>190</b>
<b>CHAPTER 7.....</b>	<b>192</b>	
<b>INDUSTRIAL UPGRADING BY KENYAN GARMENT FIRMS.....</b>	<b>192</b>	
<b>7.1</b>	<b>Introduction .....</b>	<b>192</b>
<b>7.2</b>	<b>Structure of the Garment Value Chains in Kenya .....</b>	<b>192</b>
7.2.1	Value Chain Leading to the US Market .....	192
7.2.2	Value Chain Leading to the European Market .....	200
7.2.3	Value Chain Leading to the Domestic and Regional Markets.....	204
<b>7.3</b>	<b>Governance Structure in Garment Value Chains in Kenya.....</b>	<b>212</b>
7.3.1	Governance in the Value Chain Leading to the US Market .....	212
7.3.2	Governance in the Value Chain Leading to the European Market .....	214
7.3.3	Governance in the Value Chain for the Domestic Market.....	215
7.3.4	Governance in the Value Chain for the African Regional Chain .....	216
<b>7.4</b>	<b>Upgrading Patterns in Garment Chains in Kenya.....</b>	<b>216</b>
7.4.1	Upgrading Patterns in the US Market Value Chain.....	217
7.4.2	Upgrading Patterns in the European Market Value Chain .....	220
7.4.3	Upgrading Patterns in the Domestic Market Value Chain .....	222
7.4.4	Upgrading Patterns in the African Regional Market Value Chain .....	223
7.4.5	Upgrading Patterns Firms in Multiple Market Value Chains .....	223

<b>7.5</b>	<b>Producers' Perceptions on Upgrading in Kenya .....</b>	<b>225</b>
<b>7.6</b>	<b>Buyers' Perception on Factors Determining Sourcing Patterns in Kenya</b>	<b>228</b>
<b>7.7</b>	<b>Conclusion .....</b>	<b>230</b>
<b>CHAPTER 8.....</b>		<b>231</b>
<b>EMPIRICAL RESULTS OF TECHNICAL EFFICIENCY .....</b>		<b>231</b>
<b>8.1</b>	<b>Introduction .....</b>	<b>231</b>
<b>8.2</b>	<b>Pearson's Rank Correlation Analysis of Variables.....</b>	<b>231</b>
<b>8.3</b>	<b>Appropriate Tests for Technical Efficiency Estimation .....</b>	<b>234</b>
<b>8.4</b>	<b>Technical Efficiency Estimates (Elasticities).....</b>	<b>238</b>
<b>8.5</b>	<b>Technical Efficiency Distribution .....</b>	<b>240</b>
<b>8.6</b>	<b>Confidence Intervals .....</b>	<b>243</b>
<b>8.7</b>	<b>Technical Efficiency Determinants.....</b>	<b>245</b>
<b>8.8</b>	<b>Conclusion .....</b>	<b>246</b>
<b>CHAPTER 9.....</b>		<b>248</b>
<b>SUMMARY AND CONCLUSIONS .....</b>		<b>248</b>
<b>9.1</b>	<b>Summary .....</b>	<b>248</b>
<b>9.2</b>	<b>Research Arguments - Recast of the Study.....</b>	<b>250</b>
<b>9.3</b>	<b>Discussion of the Findings .....</b>	<b>251</b>
9.3.1	General Characteristics of Garment Firms in Kenya.....	251
9.3.2	Prospects for Upgrading in the Kenyan Garment Industry.....	253
9.3.3	Technical Efficiency in the Kenyan Garment Industry .....	257
<b>9.4</b>	<b>Research Achievements.....</b>	<b>258</b>
<b>9.5</b>	<b>Limitations of the Study.....</b>	<b>261</b>
<b>9.6</b>	<b>Policy Recommendations .....</b>	<b>263</b>
9.6.1	Promote Participation of Locally-owned Firms in the Export Markets.....	263
9.6.2	Enhance Preferential Market Access such as AGOA.....	264
9.6.3	Lobby for Extension of the AGOA Derogation of Rules of Origin .....	265

9.6.4	Develop the Textile Sector .....	266
9.6.5	Export Market Diversification.....	266
9.6.6	Control of Clothes Importation and Promote Domestic Demand.....	267
9.6.7	Shift from Woven to Knit Garments .....	269
9.6.8	Infrastructural Support for Export Promotion .....	269
<b>9.7</b>	<b>Areas for Further Research.....</b>	<b>270</b>
	<b>REFERENCES.....</b>	<b>272</b>
	<b>APPENDIX.....</b>	<b>287</b>
	<b>Appendix 1: AGOA Eligible SSA Countries by July 2009 .....</b>	<b>287</b>
	<b>Appendix 2: Key Informant Interview Guide.....</b>	<b>288</b>
	<b>Appendix 3: Case Study Interview Guide.....</b>	<b>290</b>
	<b>Appendix 4: Survey Questionnaire .....</b>	<b>292</b>
	<b>Appendix 5: Technical Efficiency Point Estimates.....</b>	<b>305</b>
	<b>Appendix 6: Distribution of Firm Level Technical Efficiency .....</b>	<b>306</b>
	<b>Appendix 7: Pearson's Rank Correlation Matrix for Production Model.....</b>	<b>307</b>
	<b>Appendix 8: GATT and WTO Multilateral Trade Rounds .....</b>	<b>308</b>
	<b>Appendix 9: Mean Differences between Pure Exporting and Local Firms .....</b>	<b>309</b>

## LIST OF TABLES

Table 2.1: Clothing Exports from Africa to the US (US\$ million).....	25
Table 2.2 Bilateral Trade between Kenya and the US 2002- 2008 (US\$ '000).....	31
Table 2.3: Performance of the Kenyan EPZ Clothing Sector, 2000 – 2008.....	44
Table 3.1: Characteristics of Producer-Driven and Buyer-Driven Value Chains.....	73
Table 3.2: Key Determinants of Global Value Chain Governance .....	77
Table 5.1: Classification of Firm Sizes in the Garment Industry .....	140
Table 5.2: Summary of Firms Contacted in the Survey.....	143
Table 5.3: List of Key Informants for the Study.....	147
Table 5.4: Attributes of Firms in the Case Study .....	149
Table 6.1: Firm Location by Export Incentive Programme.....	160
Table 6.2: Firms Distribution by Age.....	163
Table 6.3: Number of Employees in 2005.....	165
Table 6.4: Proportion of Female Workers .....	167
Table 6.5: Percentage Share of Equity in the Capital .....	170
Table 6.6: Sources of Capital.....	171
Table 6.7: Country Where Most of the Machinery was bought .....	178
Table 6.8: Acquisition of most of the Machinery .....	179
Table 6.9: Distribution of Firms by Market Destinations.....	180
Table 6.10: Age of Influential Decision Makers .....	184
Table 6.11: Academic Qualification of Influential Decision-Maker .....	185
Table 6.12: Constraints Facing Garment Firms.....	188
Table 6.13: Summary Statistics of Key Variables.....	191
Table 7.1: Key Variable of Garment Value Chains in Kenya .....	211
Table 7.2: Governance Structure and Implications for Upgrading in Kenya .....	225
Table 8.1: Correlation Matrix of Factors Determining Technical Efficiency .....	233
Table 8.2: Hypothesis Testing for Specification and Equality of Parameters .....	235
Table 8.3: Multicollinearity Tests for the Garment Industry.....	238
Table 8.4: Results of Cobb-Douglas and Inefficiency Effects .....	239
Table 8.5: Summary Statistics of Technical Efficiency Estimates.....	240

## LIST OF FIGURES

Figure 2.1: Quantum Index for Clothing & Total Manufacturing 1990-2008 (1976=100)	49
Figure 3.1: Four Links in a Basic Value Chain	68
Figure 4.1: Theoretical Framework: Upgrading and Technical Efficiency in Garment Value Chains	125
Figure 6.1: Garment Products in Kenya	174
Figure 6.2: Market Destinations for Local Firms	182
Figure 6.3: Market Destination by Country in 2006	183
Figure 7.1: The US Market Value Chain Map	193
Figure 7.2: Share of Knitted and Woven Clothing Exports from Kenya to the US	199
Figure 7.3: The European Market Value Chain Map	202
Figure 7.4: Domestic Market and Africa Region Market Value Chain Map	209
Figure 7.5: Producers' Perception on Upgrading in the Garment Industry	226
Figure 7.6: Buyers' Perception on Upgrading in the Garment Industry	229
Figure 8.1: The Distribution of Efficiency Scores among Garment Firms	243
Figure 8.2: Point Estimates and Confidence Intervals for Garment Firms	244

## LIST OF BOXES

Box 2.1: Global Textile & Clothing Trade Policies	14
Box 2.2: Amendments and Extensions of AGOA Provisions	26
Box 6. 1: Motivations for Operating in Kenya	164
Box 7.1: Respondent's Opinion about Technological Level in the Firm	197

# CHAPTER 1

## INTRODUCTION

### 1.1 Background to the Study

Diversification into export categories with greater value added than the traditional agricultural commodities with their associated price risks (volatility and long-term decline) remains a major objective for many African countries. The clothing sector has been at the forefront of export diversification for many countries that have now achieved middle or high income status (Brenton and Hoppe, 2007). Clothing production is labour-intensive, involving relatively low start-up capital, easily transferable technology, and scale economies are not important. Labour requirements can be met with low and semi-skilled workers especially women (Nordås 2005, McCormick and Rogerson 2004). All these factors favour production in locations where labour costs are low. As a result, textiles and clothing industries tend to move to countries with relatively low labour costs. This industry provides one of the first stages of economic upgrading beyond primary commodities and agricultural exports (Phelps *et al.* 2008; Dickerson 1999; McCormick and Rogerson 2004; Kaplinsky *et al.* 2006; Nordås 2005). For these reasons, it is a sector which at least historically, has shown the face of industry to countries in the early stages of their growth paths, and has provided a stepping-stone for the development of industrial capabilities. The textile and clothing industry is in most cases the only industry through which most developing nations many developing nations can participate in international trade; and therefore it is a main source of export revenue and employment.

However, there have been some significant changes in the global market for textile and clothing that may condition the role that the sector can play in development relative to previous episodes of industrialisation (Brenton and Hoppe, 2007). Paramount among these was the termination of Multifiber Arrangement (MFA) on 1 January 2005 which eliminated a quota regime that together with its precursor, the Long Term Agreement (LTA), had governed the global trade for textiles and clothing for more than three decades. The other is the rise of buyer-driven value chains, the shift towards just-in-time delivery, lean retailing methods and the emergence of very large developing countries,

such as China and India as key clothing suppliers (World Bank, 2007). The effect of these changes is that competition has increased and margins for clothing exporters from low and emerging economies declined significantly. In the garment buyer-driven value chains, global buyers have become extremely powerful in controlling all activities of the chain. Increasingly, these buyers determine which actor undertakes what activity within the chain and under which terms through the chain governance.

Not long ago textile and apparels around the world constituted many independent sectors and independent markets. Nowadays, these industries no longer operate in isolation; rather textile and apparels production and marketing activities form one global sector. The textiles and clothing industry is one of the oldest and largest export industries in the world. Although individual countries have their own textile and apparel industries to meet the domestic demand, most nations produce for the international textiles and apparel market, making it one of the most global industries. It is estimated that more than 200 countries produce garments for the international market, suggesting that many countries do have interest in the global garment trade. Moreover, the complexity of production and marketing activities in textile and clothing unquestionably makes this industry truly a global business (Brenton and Hoppe 2007, Adhikari and Yamamoto 2007, Fukunishi *et al.* 2006). The garment industry is the typical 'starter' industry for countries engaged in export-oriented industrialisation, and it played the leading role in East Asia's early export growth. In early stages of development, no doubt, the garment industry provides opportunities for diversification into high-value added export products away from commodities.

From a global perspective, this industry is particularly important for three reasons. First, most developed countries of today as well as newly industrialised countries have used this industry as the spring board for their development journey (Adhikari and Yamamoto, 2007). Even some least developed countries have been able to step onto the development ladder on the basis of their textiles and clothing industries. The garment industry particularly remains labour-intensive employing millions of women, mostly women who are marginalised in other traditional manufacturing sectors (Vijayabaskar 2002, Adhikari and Weerutange 2007, Brenton and Hoppe 2007). It is therefore a major source of non-

agrarian employment for the rural low-skilled populace. Together, textile and apparel is the largest source of industrial employment in the world.

Second, this industry has relative low entry barriers; entry does not require huge capital outlay and factories can be set up that employ workers with relatively low skills. As such it is characterised by high competition, because production activities involve simple technology and hence low start-up costs (Adhikari and Weerutange, 2007). Moreover, the ease of entry and exit in this industry, due to low capital intensity, allows even the small-scale entrepreneurs to participate in the garment manufacturing activities (Dickerson 1999, McCormick et al. 2007). The basic unit of production remains the individual sitting at a sewing machine. Although some technological strides have been made, sewing continues to be a labour intensive activity that does not require formal education, so newly proletarianized workers can enter this industry without much advance penetration. Despite the low start-up investment costs, historically, the expansion of this industry provided a base upon which to build capital for more technologically demanding activities in other sectors. This coupled with the recent success of the East Asian economies, makes this industry a lead sector in the industrialisation process of low-income countries (Fukunishi, *et al.* 2006; McCormick, 2001; Bair and Gereffi, 2001; Kaplinsky and Morris, 2006).

Third, this industry has for along time been the most protected of all manufacturing industries in the global economy, both in developed and developing countries (Bagchi, 2001 p.44-50).<sup>1</sup> The protectionist interests have been extremely ingenious in creating new instruments (tariffs and non-tariff barriers) in the past 50 years. Starting with the imposition of voluntary export restraints (VERs) in 1957 on exports from of cotton textiles from Japan in the United States, the regime of protection was institutionalised in 1974 with the introduction of the Multifiber Arrangement (MFA), which governed international trade in textiles and clothing up to 1994 (Adhikari and Yamamoto, 2007). The termination of MFA in 2005 caused a major shift in the world market for textile and clothing, with more efficient producers achieving breathtaking gains in their exports, while the less competitive ones clearly suffered some setbacks. The experience over the

---

<sup>1</sup> A more detailed discussion on textile and clothing trade protection is provided in Chapter 2.

last three years since the elimination of quotas shows that supply patterns have become consolidated towards countries with stable supply networks and well developed capacities for scaling up. These countries such as China, India, Mexico, some East Asian and Eastern European countries have benefited from the elimination of quotas. Smaller garment producing countries for whom quotas were advantageous by providing limited yet assured access to export markets under the quotas have lost. Kenya is certainly in the latter category and its continued participation in global garment trade is hedged on the ability of firms to upgrade as a way of increasing their competitiveness. This can be achieved through integrated supply chain which at the moment is largely undeveloped.

In Kenya, the garment industry has been central in the development agenda because it hosts a substantial share of manufacturing jobs and has also been a major source of employment growth over past decade. Besides providing employment, it plays an important role in generating foreign exchange, attracting foreign direct investment (FDI) and also in integrating Kenya into the global market for manufactured products. The textile and clothing sub-sector is the third largest industry in Kenya, after food processing and metal comprising 11% of all manufacturing firms, contributing 2% of total manufacturing output and employing more than 42,000 (in 2004) or 2.5% of total employment (World Bank 2007:56). In 2004, there were about 225 licensed manufactures of yarn, fabrics and clothing in Kenyan formal sector (World Bank, 2007). There has also been a large informal component of the sector comprised of at least 1,000 firms. The sector is entirely private and manufactures a wide range of products for domestic, regional and global markets.

It therefore constitutes an important component of manufacturing sector, and it is one of the key sub-sectors targeted for spearheading industrialisation by the year 2030 (Kenya, Republic of, 2008: Vision 2030). However, the deterioration in the purchasing powers of majority of the population and the termination of MFA have undoubtedly brought significant crises to this industry. Therefore, the potential of this industry in spearheading industrial development in Kenya needs to be re-examined.

In this study, we make use of terminologies peculiar to global garment value chain research and whose interpretation might be different in other discourses. These include terms such as Multifibre Arrangement (MFA), Long Term Agreement (LTA) and Governance.<sup>2</sup> The MFA is a trade arrangement that came into force on January 1 1974 to govern global trade in textile and clothing which gave importing countries powers to use quota system when importing textiles and clothing products from other countries. LTA was its precursor and governed trade in textile and clothing between 1962 and 1973. The term 'governance' in global value chain research is used to depict relationship among different actors in the chain. As a dimension of a value chain it refers to control that actors either directly or indirectly exert over activities by other actors.<sup>3</sup>

## 1.2 Statement of the Research Problem

It is widely held that participation in GVC not only allows firms to learn basic production discipline, but also offers various opportunities for upgrading (Gereffi *et al.*, 2001). The argument is that once firms have mastered techniques for basic products, they can upgrade by moving into more sophisticated and profitable products lines. They can also upgrade their processes by increasing technical efficiency, either through superior technology or reorganising their production systems (McCormick and Rogerson, 2004). Policy making processes in Kenya have since independence been concerned with looking for ways to help garment enterprises to achieve upgrading beginning with the import substitution (ISI) and then export-oriented (EOI) industrialisation policies.

One of the main arguments in support of EOI was to boost export of manufactured products. Bigsten, *et al.* (2004:116) argue that exporting offers maximum scope for increased discipline of competition and the contact with foreign international customers to provide maximum scope for learning opportunities. In addition, participating in export markets brings firms into contact with international best practices and fosters learning and productivity growth ... a good deal of the information needed to augment basic capabilities often comes from buyers in exports markets who freely provide product

---

<sup>2</sup> Detailed explanations of these terminologies are provided in Chapter 2 (Box 2.1) and Chapter 3 on page 70 of this thesis.

<sup>3</sup> See section 3.2.2 for more details.

designs and offer technical assistance to improve technology in the context of their sourcing activities” (Tybout and Westbrook, 1995). Indeed, the experience of the Newly Industrialised Economies (NICs) spearheaded by labour-intensive manufacturing has been a good lesson for other developing countries like Kenya to promote labour intensive industries, one of which is garment manufacturing.

One issue that trade theory fails to address is that liberalisation or adoption of export-led industrialisation alone may not automatically lead to increased exports. Entry into global markets is governed and controlled by global buyers and unless firms are integrated in such value chains, their efforts to export may be futile. Kaplinsky and Morris (2002:9) observe that efficiency in production is only a necessary condition for upgrading and penetrating global markets. Literature on value chains underlies the influence of global buyers on upgrading developing country exports especially in buyer-driven value chains (Gereffi, 1994; Schmitz and Knorringa, 2000; Humphrey and Schmitz, 2000; Gibbon, 2000; McCormick and Schmitz 2002). In the garment value chain, the governance structure determines the nature of upgrading for firms located in developing countries (McCormick and Schmitz, 2002; Gibbon 2000). Humphrey and Schmitz (2000:4) make a distinction between different types of upgrading and argue that some forms of chain governance favours some types and not others. Global value chain analysis shows that there are new opportunities, which accrue from operating in global chains, but which also limits and traps.

While value chain literature is conclusive on the types of upgrading that producers in global value chains are likely to experience, empirical evidence on upgrading potential for firms in other value chains has not been given adequate scholarly attention. There are only a few studies which examine how firms inserted in different value chains can upgrade (Bazan and Navas-Alemán 2004; Navas-Alemán 2006; Tewari, 2006; Schmitz, 2006; Kishimoto 2004). One of the fundamental findings in these studies is that firms inserted in domestic value chains whose governance structure is based on market-based relationships tend to show higher potential for upgrading compared to those inserted in GVC. In this case, firms use knowledge and expertise developed by participating in the domestic markets to venture into the export markets where they export their own branded

products and not in the brand name of the buyers. These scholars conclude that participation in multiple value chains enhances upgrading potential for local firms.

While the existing evidence is based on large developing economies whose domestic markets are significant namely Brazil, India and Taiwan, no such evidence is available for small developing countries like Kenya. In the garment industry which apparently most of these countries depend on, evidence regarding the potential of upgrading in other value chain is scanty. Studies on African clothing sectors by Gibbon (2004, 2000), McCormick and Schmitz (2002), and Morris, *et al.* (2005) are inclined towards upgrading in global value chains. Essentially, this study is designed to fill this gap by providing a systematic comparison upgrading potential for Kenyan garment firms inserted in different value chains. This study further estimates technical efficiency in the industry, which is closely related to upgrading.

### **1.3 Research Questions**

Following the elimination of the quota regime in 2005, competition in global garment trade intensified, which threatens the sustainability of Kenya's firms in global value chains. It is however established that in order to achieve both export growth and rising incomes in such a competitive environment local enterprises need to upgrade – to make better products, make them more efficiently, or move into more skilled activities. In GVC, such efforts may be thwarted by the nature of chain governance, which gives global buyers enormous power over other actors in such value chains. The broad question that this study attempts to answer is: how different are upgrading patterns for firms operating in various garment value chains? Stated differently, does the value chain governance matter in industrial upgrading? To answer this broad question, specific questions for our study are:

- 1) In what different value chains do Kenyan garment firms operate?
- 2) Do firms operating in global value chains experience product upgrading more than similar firms in other value chains?
- 3) Do firms inserted in global value chains experience process upgrading more than those in other value chains?

- 4) Are there differences in functional upgrading between firms inserted in different value chains?
- 5) What are the implications of participating in global value chains on firms' technical efficiency?

#### **1.4 Objectives of the Study**

The broad objective of this study is to examine the nature of value chains into which garment manufacturing firms in Kenya are inserted. Subsequently, their prospects for industrial upgrading and technical efficiency are also evaluated. The specific objectives include:

- i. To map out different value chains into which Kenyan garment firms are inserted
- ii. To investigate how participation in global value chain affects product upgrading
- iii. To analyse how participation in a global value chain affects process upgrading
- iv. To examine the effect of participation in global value chain on functional upgrading, and finally,
- v. To estimate technical efficiency of garment manufacturing firms and examine determining factors.

#### **1.5 Significance of the Study**

The significance of the garment industry in Kenya's development agenda is well documented (see McCormick, 2001, McCormick, *et al.*, 2001; Ikiara and Ndirangu 2004; McCormick *et al.* , 2006; Omolo, 2006, Phelps *et al.* , 2009). Specifically, the industry plays a critical role in satisfying both the domestic and export demand and in creating job opportunities for both men and women. Unlike other manufacturing sectors where male workers dominate, the garment industry is dominated by female workers and therefore provides a good avenue for addressing poverty. More importantly, given the experience of the NICs which relied heavily on labour-intensive exports in their initial stages of development, Kenya's aspiration to be industrialised by 2030 can only be realised through labour intensive industries such as those dealing with garment. This study

contributes to this discourse by utilising a value chain approach to examine upgrading patterns for firms in different chains, a comparison that has not been adequately addressed in literature.

Market access for garment products is an important policy concern in developing countries following the termination of the MFA. The abolition of quotas not only increased the market for developing countries but also created more competition as efficient producers who were formerly restrained by quotas surged their supplies into the less-restricted world markets. Given the changing dynamics of the global garment trade, the sustainability of the Kenyan industry is certainly hedged on their potential to upgrade. Apparently, upgrading within GVC may be somewhat restrictive and there is an urgent need to explore alternative trajectories that can enhance industrial upgrading. This study is therefore designed to shed more light on the existence of such trajectories.

The use of the value chain concept enhances our understanding of the garment trading activities which is not captured by macroeconomic data. Research on value chains shows that an increasing amount of international trade takes place within trading networks (McCormick and Schmitz, 2002; Schmitz, 2006). Moreover, a detailed understanding of the actors, linkages, and value-added at each stage of production and distribution seems to be a necessary underpinning for meaningful efforts to upgrade an industry. In addition, it enables us to identify winners and losers from the globalisation of product markets and to find ways through which gains from globalisation are spread.

The estimation of technical efficiency in the garment industry enhances our understanding reasons behind the low or negative total factor productivity growth rates, associated with sub-optimal firm sizes, underutilisation of installed capacities, limited technological advancements and incompetence in both domestic and foreign markets, in spite of structural adjustment measures undertaken in the 1990s (Fukunishi, *et al.* 2006, Lundvall, 2002). Existing empirical studies on technical efficiency in Kenyan manufacturing have used data from four major subsectors of manufacturing namely food, wood, metal and textiles (see Bigsten and Kimuyu 2002, Ngui, 2008). In such studies, unique features of the garment industry are masked and may not be given appropriate

attention. For purposes of this study, the focus is on the garment industry alone, and in my opinion this enables us to eliminate the heterogeneity associated with diversity of manufacturing activities.<sup>4</sup> With the exception of Phelps *et al.* (2009, 2008) and McCormick *et al.* (2007) majority of other previous studies on the garment industry have concentrated on micro and small enterprises (MSE) whose export potential is generally low (see for example, McCormick 2001, Kinyanjui and McCormick, 2003). In contrast, this study focuses on medium- and large- scale firms which have high exporting and upgrading potential.

Finally, the significance of this study lies not only on the academic excellence but also on the practical usefulness of its findings. Due to its labour intensity, and use of local labour, the garment industry could contribute significantly towards employment creation, income generation and thereby poverty reduction. A study on how to promote the upgrading and efficiency of this industry is therefore appropriate.

## **1.6 Organization of the Study**

This thesis is organised into nine chapters. Chapter One provides the background information for the study including the research problem. Chapter Two provides an overview of the garment industry in Kenya and how global trade policies have shaped the industry. Chapter Three presents the literature review starting with theoretical and then empirical literature. The conceptual and analytical frameworks are provided in Chapter Four, while Chapter Five outlines the methodology followed in carrying out this study.

Findings are presented in Chapters Six, Seven and Eight. In Chapter Six, an overview of the firms included in the survey is discussed, while Chapter Seven compares governance and upgrading in different value chains represented in the industry. Chapter Eight empirically estimates the technical efficiency of the industry using a stochastic frontier analysis. Lastly, Chapter Nine presents the summary and conclusion of the study.

---

<sup>4</sup> See for example Ngui (2008:14) on sectoral composition in RPED studies.

## CHAPTER 2

### KENYAN GARMENT INDUSTRY IN GLOBAL CONTEXT

#### 2.1 Introduction

The overall objective of this chapter is to understand the Kenyan garment industry in its global context. We begin by discussing the global context of the industry and then profile the structure of the Kenyan garment industry including its evolution since independence in 1963. The global context is discussed by tracing how garment global trade has evolved since the formation of General Agreement of Tariffs and Trade (GATT) in 1948. It is shown that existing global trade regimes have directly or indirectly affected the performance of the Kenyan garment industry. Of particular mention is the impact of trade preferences such as the AGOA and the MFA termination which are discussed in detail.

The terms 'textile' and 'clothing' are often used interchangeably even though they do not mean exactly the same thing. In fact, they are two distinct but related industries. A distinction between these two terms is constituted in the type of products that each industry specializes in. For instance, a textile industry manufactures a wide variety of fabric, threads, blankets, and filaments from a textile mill. In its comprehensive sense, the term "textile" is used in two different ways: it includes all aspects of textile and apparel production from the spinning of fibres to the assembly of end-use products (Dickerson 1999, McCormick *et al.* 2007). In a more limited sense, it is used to designate only a portion of the textile industry, namely the segment that manufactures fibres, yarns, fabrics, and selected finished products; while the manufacture of garment (or any other end product) is considered to be a separate sector.

On the other hand, clothing (also referred to as the garment, apparel, or attire) describes the textiles cut in design and sewn or knitted into something that can be worn (Dickerson, 1999:5). The clothing industry produces men's, women's and children's wears, as well as occupational clothing. It is therefore common for one to talk of men's wear, women's wear, or children's wear to denote garment products. A further distinction of garments has to do with the end market and/or the income level of the ultimate consumers.

The textile and clothing industry has been at the centre of industrialisation in Kenya as early as during the colonial period. Existing evidence shows that as early as 1954, there were 74 enterprises which in total employed approximately 3,000 workers; and that at independence, Kenya had a relatively well developed textile and clothing industry.<sup>5</sup> The industry flourished under the 'import-substitution' regime instituted soon after independence to become the second largest employer after the public sector in 1980. However, the performance of this industry was reversed following the trade liberalisation adopted under the structural adjustment programs (SAPs). It is not until 2001 that the industry re-emerged this time with a new momentum in export following the enactment of the African Growth and Opportunity Act (AGOA). Therefore, we can argue that the performance of this industry is largely shaped by global, regional and national trade policies and institutions as discussed in the subsequent sections of this chapter.

## **2.2 Global Policies Governing Trade in Textiles and Clothing**

### **2.2.1 The Beginning of Protectionism in Textiles and Clothing**

Restrictions on textiles and clothing exports into developed countries have been in place for at least the past four decades. At the beginning restrictions through quotas were imposed arbitrarily by importing countries, without any kind of formal structure or explicit multinational agreement and coordination. However, the creation of when General Agreement on Tariffs and Trade (GATT) a multilateral trading system back in 1947 somehow forms the genesis of restrictions in textiles and clothing. The overall objective of GATT was to do away with the legacy of nationalism and bilateralism that had characterised economic relationship between nations. To do this, GATT sought to not only reduce tariffs and non-tariff barriers to trade, but also to promote free trade among countries (Bagchi, 2001). The cardinal principle of GATT was non-discrimination or the most favoured nation (MFN). Its features of free trade were embodied in different Articles of GATT which came into force on 1 January 1948. Since then GATT governed international trade in goods until its successor the World Trade Organization (WTO) was established in 1995. The GATT mainly reflected goals of developed countries, which

---

<sup>5</sup> See Kenya (2001) Sessional Paper on the Textile and Clothing Industry.

among many things aimed to achieve free, non-discriminatory trade by the abolition of non-tariff barriers and reduction of tariffs through international negotiations. Paradoxically, trade in textiles and clothing was conducted outside the GATT rules due to the vested interests that developed countries had on this industry. In fact, it was the US which initiated a systematic departure from the principles of GATT, whose creation it had strongly supported.

By the late 1950s, Japan and a few developing countries had made their entry into the international trade in textiles in their quest for industrial development.<sup>6</sup> Specifically, developing countries began to increase their exports in cotton textile fabrics and made-up products thereby posing a threat to the survival of textile and clothing sectors of industrialised countries. The US and other developed countries were alarmed at the emergence of this new source of competition from non-traditional sources, although their market penetration at that time was on very modest. In response, these developed decided to discard the accepted and established principles of non-discrimination and trade liberalisation; instead they developed a spurious concept of 'market disruption' that would permit them to discriminate against producers from developing world through the application of selective restraints. They established a system that protected their own domestic producers: as a result any efforts to liberalise trade in textiles and clothing was always met with stiff opposition (Bagchi, 2001; Dickerson, 1999; McCormick *et al.*, 2007; Lande, *et al.* 2005). They started imposing quotas for developing countries without any kind of formal structure or explicit multinational agreement and coordination.

The concept of '*market disruption*' became the cornerstone of the first two restrictive agreements: the Short Term Arrangement (STA) negotiated in 1961, and the Long Term Agreement (LTA), 1962-1973. This concept was further retained in the Multifiber Arrangement (MFA) in 1974-1994 (see Box 2.1). This concept was used to give developed countries a leeway to impose quotas on imports from developing countries, a practice that was against the GATT principles.

---

<sup>6</sup> For the then developing countries, the textiles and clothing industry, with its high labour-intensity, low capital needs and relatively low technological requirements was an obvious choice for industrialisation. In addition, the industry served as a principal source of export earnings to sustain economic development (Bagchi, 2001).

## Box 2.1: Global Textile & Clothing Trade Policies

### GLOBAL TEXTILE TRADE POLICIES

The following summary shows major developments in global textile and clothing trade policies from the 1950s to the present.

- 1955, *December*: Japan announces first VER on cotton textile products to the United States beginning from January 1956.
- 1956, *September*: Japan announces 5-year VER on cotton products to the United States beginning January 1957.
- 1959 *February*: The United States tries to get Hong Kong to agree to a VER on cotton products; Hong Kong refuses.
- 1958 – 1960: Europeans use various illegal measures to restrict cotton products from less-developed countries.
- 1960, *November*: GATT members agree on a definition of market disruption
- 1961 *July*: STA agreed upon; commences on October 1, 1961.
- 1962, *February*: LTA agreed upon; commences on October 1, 1962.
- 1962 – 1967: various bilateral and unilateral measures taken under LTA
- 1963- 1964 The United States tries to secure an international agreement to cover wool products; efforts do not succeed.
- 1967, *April*: LTA renewed for 3 years; commences October 1967
- 1969, *April*: The United States try to get EU to agree to multilateral arrangement to include wool and manufactured fibre trade.
- 1970, *October*: LTA was renewed again.
- 1969-1971: The United States gets Far Eastern countries to restrain exports of wool and manufactured fibre products to U.S. markets.
- 1973, *December*: MFA I agreed upon; commences January 1, 1974.
- 1977, *December*: MFA II agreed upon; clause allows “jointly agreed reasonable departures.”
- 1981, *December*: MFA III agreed upon; anti-surge provision included,
- 1986, *July*: MFA IV agreed upon; fibre coverage extended.
- 1991, *July*: MFA IV extended to December 1992.
- 1992, *December*: MFA IV extended to December 1993.
- 1993, *December*: MFA IV extended to December 1994.
- 1994, *December*: Uruguay Round concluded. “GATT 1994” became an amended, updated version of GATT 1947, providing the key disciplines affecting international trade in goods. These agreements outlined MFA phase-out.
- 1995, *January 1*: The World Trade Organization established. The Agreement on Textiles and Clothing (ATC) replaces the MFA for the 10-year phase-out of quotas. Stage 1 of the phase-out begins and quota growth levels increase.
- 1998, *January 1*: Stage 2; additional products integrated; quota growth levels increased.
- 2002, *January 1*: Stage 3; additional products integrated; quota growth levels increase.
- 2005, *January 1*: Full integration of textile and apparel into mainstream WTO trade rules (final elimination of quotas).

Source: Adapted from Dickerson (1999, p. 360).

The United States, along with the United Kingdom, had taken the lead in defining the rules of international trade that came to be embodied in the GATT 1947. Ironically, the United States also took the first step to move away from the GATT framework and its principles in dealing with problems of textile trade, when it proceeded to seek bilateral relations with Japan in the textiles area in 1956. As a result of this bilateral trade agreement, Japan which was heavily dependent on the American market for its

resurgence of the economy accepted voluntary export restraint (VER) on textile products (Bagchi, 2001; Rivoli, 1995). This marked the beginning of textile and clothing protectionism. Other informal arrangements followed with developed countries negotiating directly with developing countries for control of their textile and clothing exports in to the developed world.<sup>7</sup> By this time, developing countries' exports into markets of developed countries had started to surge, and the textiles industries in developed countries were under threat, hence the protectionist measures.

### **2.2.2 Short Term Arrangement 1961-1962**

By the 1960s, it was apparent that the textiles industry in the U.S. was under severe threat from imports from developing countries, some of which had declined to hold bilateral negotiations with the U.S. Representatives of the U.S. textile industry becoming increasingly impatient with the growth of imports from low wage countries into the domestic markets. Thus, the US administration, led by President Kennedy, attempted to further restrain imports of textiles from developing countries on the ground of ill-conceived market disruptions (Dickerson, 1999:344 ff). The concept of market disruption grew out of the desire to limit low-wage textile imports in the developed countries' markets.

Consequently, a GATT meeting of sixteen countries was convened on the request of the US in July 1961 to assess the impact of textile imports from developing countries. During this meeting, the US took the lead in tabling detailed proposals with the emphasis on orderly expansion of world trade in cotton textiles. The proposal contained provisions to impose quotas on imports from particular countries which were deemed to cause 'market disruption' in the importing country. It was further suggested that the imposition of quotas should be done with or without the consent of the exporting country. The US proposal was not well received, particularly by developing countries which, led by India, argued that textile and clothing products were not different from other commodities of international trade, and therefore the proposal to have any special treatment outside the

---

<sup>7</sup> For a detailed discussion see Gibbon and Ponte (2005 p. 46).

GATT was not well intended. The meeting ended without a consensus on how to handle textile trade.

As a way forward, a short document containing only two Articles (I & II) based on flawed definition of 'market-disruption' was adopted on short term basis as participating countries consulted further to come with a long term solution on global trade in textile and clothing. Article I, provided that developed countries would restrain imports from a source (with or without its consent) at specified levels when they cause market disruptions, while Article II established a Cotton Textiles Committee to find a long term solution to the problems in the trade of cotton textiles. This was called the Short Term Arrangement (STA), which became effective on October 1, 1961 and lasted for a period of twelve months only. The STA was designed to achieve an orderly expansion of restricted markets to avoid detrimental market disruptions in importing (developed) countries.<sup>8</sup> A year later, this was followed by the Long Term Cotton Arrangement (LTA) which became effective on October 1<sup>st</sup> 1962 (Raffaelli and Jenkins, 1995; McCormick *et al.* 2007).

### **2.2.3 Long Term Arrangement (LTA) 1962-1973**

The LTA emerged out of deliberations by the Cotton Textiles Committee in 1962. It was based on the definition of 'market disruption' as adopted by GATT in 1960 and its objective was to facilitate 'reasonable and orderly' expansion of textile trade. 'However, LTA was largely directed against imports from developing countries; contrary to the GATT fundamentals and was designed to permit continuation of existing discriminatory restrictions of textile imports from developing countries' (Bagchi, 2001:43). Countries maintaining restrictions inconsistent with GATT were required to relax them progressively each year, even though there was no agreement on how this was to be effected. In response, developed countries agreed to start negotiating bilateral agreements with individual governments to limit the quantities of textiles and apparel (Bagchi 2001; Rivoli 2005; McCormick *et al.* 2007). The LTA called upon developing countries and

---

<sup>8</sup> The definition of 'market disruption' adopted by the contracting Parties in 1960 included the possibility of singling out imports of particular products from particular countries as the disrupting source (Naumann, 2005).

Japan to restrain their exports so as to avoid disruptive effects in the industrialised countries' markets.

By subscribing to LTA, without much choice, developing countries were implicitly agreeing to curtail their rights under the GATT. Individual GATT members, it was stated, were within their rights to make a mutually acceptable arrangement involving some restraint on the extent to which GATT obligations were applied. Although it was clear that the LTA was against growth of exports from developing countries, the then GATT Executive Secretary argued that LTA did not in any way contradict GATT's rules (Bagchi 2001; Raffaelli and Jenkins 1995). With all its weaknesses and protest from developing countries, LTA was finalised in February 1962 and was set to become effective beginning 1 October 1962.

The LTA marked a new dawn of an institutionalised form of protection in the textile and clothing trade. At the beginning of LTA in 1962, the membership comprised 24 countries, but a year later, six other countries had joined. The membership included practically all countries that had substantial interest in cotton textile trade, either as exporters or importers. Nonetheless, a majority of member countries were industrialised (Raffaelli and Jenkins, 1995). Initially, the LTA was designed to last for a period of five years (1962-1967) but was extended on request by developed countries for a further three years (1967-1970). When LTA was being extended in 1966, only India and Egypt resisted this extension, but they yielded to pressure from industrialised countries when the latter promised to increase the pre-LTA quotas by 15%, 19% and 3% for the European Community (EC), Austria and Denmark, respectively.

By the 1970s, man-made fibres had become an important component of the textile industry. These fibres blended well with natural fibres to impart their crease and abrasion resistant qualities, which, along with high tensile strength, proved attractive in clothing and household goods. It was the developing countries that mainly produced man-made fibre and were therefore able to circumvent the LTA restrictions. There were also clear signs that developing countries were gaining a strong foothold in the global market, particularly in manufactured fibres then not covered by LTA. In addition, the economic

changes taking place during the period 1960-1970 meant that increasingly, a good number of developing countries started producing and exporting textile products. This seems to have intensified threat in the developed countries' textile industry.

In the US, the wool textile producers were calling for protection against imports from developing countries, mostly the man-made fibre which was gradually pushing them out of the textile global markets. As structured, the LTA placed controls on shipments of cotton textile products, whereas most of the exporting countries had shifted to the uncontrolled manufactured fibre products. Therefore, when the future of LTA came under consideration again in 1970 most of the developing countries were in favour its extension, while developed countries, led by the US, opposed this extension because much of textile trade was now taking place outside the control of LTA, which only catered for cotton textiles. In other words, LTA had failed to curtail exports from developing countries as was initially expected. Developed countries argued for the quota regime to be abolished or be expanded to include other forms of textiles beyond cotton (Dickerson 1999). In the end, the LTA was extended in its current form but members agreed that there was an urgent need to review its operation during the three years, with a view to setting up a new arrangement. The GATT Council appointed a negotiating committee to come up with another arrangement that would include all types of textile fibres.

Given the surge of imports from developing countries, the US started to marshal other developed countries to compel the GATT Council to expand the mandate of LTA, efforts which were unsuccessful as the European Economic Community and Japan were against the move by the US. In retaliation, the US and Canada entered into bilateral agreements that imposed imports of manufactured fibre and wool into North America. Being outside the auspices of GATT and LTA, the results of these bilateral agreements was that growing quantities of Asian textiles were diverted from the American market to the European market; and within a short time the textile and apparel producers began press for protection. At the same time, Japan was beginning to experience the loss of comparative advantage to the less-developed countries, as well as the effect of the currency realignment of 1971. Soon, the EEC countries and Japan, which had initially

declined to support the proposal by the US to expand the LTA coverage changed their mind and joined the US and Canada in renegotiating the LTA.

With these four leading world markets on board, the US moved to GATT to seek a multilateral framework that would expand the LTA to cover manufactured and woollen fibres. By then, the LTA had been extended to 1973. In response to the proposal by the US and its allies, a committee was formed by the GATT to negotiate with all the LTA member countries with a view to coming up with a more comprehensive agreement that would take into account all types of fabrics. Although some developing countries were opposed to this move, a division among them gave an opportunity for developed countries to conclude the negotiations that established the Multifiber Arrangement in 1973 and which became effective in January 1974 (Bagchi, 2001:77). In October 1973, upon its expiry, the LTA was extended by another three months between October and December 1973 as a stop-gap measure to cover a transition period before the new arrangement proposed by the negotiating group came into effect.

#### **2.2.4 The Multi-Fiber Arrangement (MFA)**

As the name implies, the MFA, which was developed and operated under the auspices of GATT, expanded the provisions STA and LTA to include products made of manufactured fibre and wool. The broad objective of the MFA was to expand trade, reduce trade barriers, and progressively liberalise world trade in cotton, manufactured fibre and wool textiles (McCormick *et al.* 2007; Dickerson 1999; Bagchi 2001). In addition, it was theoretically expected that the MFA would secure an increasing share of world textiles trade for developing countries and by extension enhance their export earnings.

In order to realise these objectives, there was need to ensure orderly and equitable development of trade and to avoid disruptive effects in individual markets and on individual lines of production. The emphasis of the MFA as in the LTA continued to be on an orderly development of the textile trade by taking into account the concerns of both importing and exporting countries. Apparently, like other preceding arrangements, it

perpetuated the departure from GATT rules, particularly the principle of non-discrimination.

It provided rules for the imposition of quotas either through bilateral agreements or unilateral actions, when surges of imports caused market disruption, or the threat thereof, in importing countries (Lande *et al.* 2005). Thus, these quotas limited the amount of exports to developed countries whose domestic industries then were facing serious damage from rapidly increasing imports. The MFA provided for the application of selective quantitative restrictions when surges in imports of particular goods caused or threatened to cause damage to the industry of the importing country (Naumann, 2005; Gibbon and Ponte, 2005; Kathurina *et al.* 2001).

The overall effect of the quota regime was to increase prices in importing countries (mostly industrialised) and to suppress growth of exports in many developing countries. In fact, textile and clothing consequently became the only sectors where quantitative restrictions were permitted in such a broad manner (Lande *et al.* 2005). These quotas were determined annually and applied differentially between countries and product categories, creating a situation whereby some countries faced substantial restrictions while others remained largely unaffected. The latter group of countries in effect benefited from the quota regime, while efficient producing countries with established and integrated supply capabilities faced severe restraints from the quota regime (Adhikari and Yamamoto 2007; World Bank, 2007).

The MFA intended only to be a temporary measure to manage the uncontrolled influx of textile and clothing into developed world markets remained in force for two decades (see Box 2.1). At its establishment, the MFA was to remain in force for a period of three years (1974-1976), but it was renewed 1977, 1981, 1986, 1991 and 1992. By the late 1980s, only six importing countries actively applied quotas under the MFA. These were the United States, the UK, Canada, Norway, Finland and Austria. Other developed countries such as Sweden, Switzerland, Japan and Australia opted out of the MFA (Kathurina *et al.* 2001). As a sign of the waning relevance of MFA, only four countries out of the six and

about 30 developing countries adhered to the MFA by 1994.<sup>9</sup> It was therefore apparent that time had come to re-examine the quota regime particularly in the context of protests from developing countries. By this time, it was also clear that most of the developing countries were unsatisfied by the way GATT rules for textiles were applied discriminatively being applied in favour of developed countries.

## **2.2.5 The Agreement on Textile and Clothing**

Following the establishment of GATT in 1948, nine rounds of multilateral trade negotiations (MTNs) have so far been held to reduce or eliminate tariffs (and in some cases, non-tariff barriers) (Appendix 8). Some of the most widely known GATT MTN trade rounds include:

- (i) The Kennedy Round, 1964-67: This was the sixth session of GATT MTN whose main objective was to lower tariffs and institute anti-dumping measures.
- (ii) The Tokyo Round, 1974-79: Involving more than 100 nations, this round focused on the negotiation of additional tariff cuts and the removal of non-tariff barriers such as quotas, import licensing programs technical standards and other measures that keep out foreign goods.
- (iii) The Uruguay Round, 1986-1994: This was the most ambitious and longest round of trade negotiations that took seven-and-half years. Involving about 123 countries, this round covered virtually all components of trade policy. It brought about the reforms in the world's trading systems since GATT was formed (Raffaelli and Jenkins, 1995). It also culminated in the establishment of the World Trade Organization (WTO) on 1<sup>st</sup> January 1995 to replace the GATT system.
- (iv) The Doha Round 2001 – to date: This round has been the most controversial and is yet to be concluded. It was launched in November 2001 with a wide scope of negotiations aiming at addressing all remaining unfair rules in the trade systems. Furthermore, the large number of members (141) and the diversity of topics, coupled with the WTO's tradition of bottom-up approach and single undertaking, make it more challenging to reach consensus.

---

<sup>9</sup> See Lande, *et al.* (2005:16) for details.

The Uruguay Round, dubbed the most ambitious and comprehensive multilateral trade negotiations ever organised by the GATT, was unique in its approach to the textile and clothing trade. For more than two decades, developing countries engaged in the textiles and clothing trade had endured discrimination under the umbrella of the LTA and MFA with a lot of discontent. Apparently, 'even though they had made mild protest because of inequity of the quota system and increasing restrictiveness, they had made no determined effort to throw off the yoke as they had been convincingly seduced by the importing countries' propaganda on the advantages of the system for their trade and the vague promises of liberalisation in the distant future' (Bagchi, 2001:219). The extremely unprincipled behaviour, the callous disregard for multilaterally agreed commitments, and the wide gulf between precepts and practices of developed countries finally disillusioned the developing countries which for the first time demanded an end of the MFA and liberalisation of the textile trade by means of a gradual return to free trade in conformity with normal GATT rules and practices during a meeting at Bogotá (Dickerson 1999, Bagchi 2001, Kheir-el-Din 2002, Nordås, 2004; McCormick *et al.* 2007). The renewal of the MFA in 1986 followed by the launch of the Uruguay Round raised discrimination concerns among developing countries involved in textile trade.

The Uruguay Round was fundamental for textile and clothing trade. This is because in 1989 negotiating parties for the first time formally accepted to include the textile trade as one of the key elements of this Round with a view to developing modalities for its integration into GATT. The modalities would also cover the phasing-out of the MFA restrictions to allow developing countries to access developed countries' markets without quota restrictions. In fact, participants in Uruguay Round of negotiations agreed that there was need to bring textile and clothing sectors under the non-discrimination rules of the GATT and to end the special treatment previously accorded to this sector. Although there was no consensus on the modality of integration, by 1990 the elements of the future arrangements were beginning to emerge. These included the modality for phasing out of MFA quotas and other restrictions that were not consistent with GATT, a safeguard system for the transition period, a surveillance mechanism, the relationship with strengthened GATT rules and disciplines, and the time span for the transition period. Following intense negotiations, on 12<sup>th</sup> December 1993, it was finally agreed that the

MFA would be dismantled progressively over a period of 10 years between 1 January 1995 and 31<sup>st</sup> December 2004 through the Agreement on Textile and Clothing (ATC). ATC became one of the multilateral trade agreements constituting an integral part of Marrakech Agreement a constituent of the Uruguay Round.

As an instrument under the GATT 1994 to oversee the phasing-out of the quota system for textiles and clothing, the principal elements of the ATC were in its product coverage, the programme of integration, the treatment of existing restrictions, the application of transitional safeguards, the commitment of GATT rules and disciplines, and the supervision of the ATC implementation (Bagchi 2001; Kheir-el-Din 2002). The obligation to integrate textiles trade into the GATT rules applied equally to all WTO members, irrespective of their membership in the MFA and was to take place in phases as long as all textiles were integrated by December 31<sup>st</sup> 2004 (see Naumann, 2005:5, Table 1). A significant feature of the ATC was its ten years lifespan; and unlike the MFA, there was no room for further extensions.<sup>10</sup>

Another important outcome of the Uruguay Round was the establishment of the WTO, which replaced the GATT system (Kheir-el-Din, 2002; Bagchi 2001). The functions of the GATT were taken over by the WTO, which was established during the final round of negotiations in the early 1990s. The WTO automatically adopted all the GATT's signatories and embodied its regulations (McCormick, 1999). The WTO is an institution that deals with the rules of trade between nations at the global or near-global level. Essentially, the WTO deals with member governments' trade problems through negotiations and agreements. The WTO has undeniably been a major player in the field of global governance, and its rules profoundly affect the economic and political orientation of its 153 members as of 2008. The decision to admit China into the WTO in 2001 for instance drastically changed the terrain of world trade with nearly all international trade now falling under the WTO.

---

<sup>10</sup> See Nathan Associates (2002) and Naumann (2005) for detailed analysis of the implementation process of ATC

## 2.2.6 Integration of Garment Trade into the WTO

The ending of import quotas caused anxiety among the developed and developing countries, which were somehow benefiting from the quota regime. The main concern among many countries was the impact that MFA would have on the overall global garment trade; was expected to unleash massive adjustment challenges. Evidence from the first few months of 2005 suggested that the removal of quotas resulted in lower profits and forced firms to either improve efficiency or close down (Adhikari and Yamamoto, 2007; McCormick, *et al.* 2006; Nordås, 2004, 2005). The final phase-out of the Multifiber Arrangement (MFA) on 1<sup>st</sup> January 2005 significantly altered rules of trade in this industry.

As global competition intensified under the new quota-free trading rules, developing countries were bracing for major changes in the structure of sourcing and apparel supply worldwide (Tewari 2006; Appelbaum 2005; OECD, 2004). There were strong expectations that supply networks would become more consolidated in the post-MFA era. It was predicted that global buyers would start sourcing from efficient and quota-constrained suppliers, which would disadvantage less competitive producers. Further, the elimination of MFA quota regime was expected to create winners and losers in the global garment trade.

Inevitably, China, and other Asian countries were the winners while developing countries whose market access had been created out of the MFA regime, were the losers (OECD, 2004). The losing countries included sub-Saharan Africa (SSA) e.g. Kenya (Kaplinsky and Morris, 2008; McCormick *et al.*, 2006; Kaplinsky *et al.* 2006; World Bank 2007). Third, the global sourcing patterns were expected to undergo restructuring so as to further marginalise the less competitive suppliers such as Kenya.<sup>11</sup> Moreover, non-price factors such as quality, flexibility, lead-times and logistics were becoming important in determining the sourcing patterns. Analysts projected that China would emerge as the

---

<sup>11</sup> According to OECD (2004 p 17). 'The scheduled elimination of quantitative restrictions under the WTO-ATC challenged the global sourcing channels that had been formed during decades of trade restrictions and entailed a considerable adjustments for all stakeholders, especially clothing assemblers in remote, low-wage countries. ... Aware of their post-ATC vulnerability, the less competitive countries were consulting to minimise the expected hardships. They were particularly anxious about losing export markets to China'.

'supplier of choice' for the world's largest retailers and buyers, followed by India at least on the basis of the developed textile and clothing industries.<sup>12</sup>

It is now four years since the phasing-out of the global system of quota controls that governed trade in the textile and clothing industry. Despite being efficient producers, China and India have surged their exports in the global world. It was predicted that China would increase its share to 50% of the global trade; that the garment trade from less efficient suppliers would be wiped out of the global map, and that most of the foreign direct investments in the clothing sector would relocate on the expiry of the quota regime. Although there has been a decline, the clothing industry in SSA countries seems to be holding on (Table 2.1). This gives more justification for undertaking this study in the post-MFA era in order to explore the sustainability of the garment industry.

**Table 2.1: Clothing Exports from Africa to the US (US\$ million)**

Country	2001	2002	2003	2004	2005	2006	2007	2008
South Africa	173.4	180.6	231.8	141.3	103.8	88.6	58.9	45.9
Kenya	80.6	125.9	187.8	277.2	270.8	264.1	248.2	246.6
Swaziland	65.9	89.1	140.5	178.6	161.0	135.2	135.3	124.9
Lesotho	223.5	321.0	392.4	455.9	390.7	387.2	383.5	339.7
Madagascar	194.3	89.4	195.9	323.8	277.4	238.7	289.4	278.8
Mauritius	259.1	254.4	269.0	226.4	167.0	119.2	114.6	101.4
Tanzania	n.a.	0.3	0.9	2.5	3.2	3.0	2.8	1.5
Ethiopia	n.a.	1.3	1.8	3.3	3.6	4.9	4.6	9.5

Source : [www.agoa.info/index.php](http://www.agoa.info/index.php)? Last accessed on 11<sup>th</sup> July 2009; 2001 data, Morris 2006.

In this study, the author explores some of the unique features of the garment industry in comparison with projections made prior to 2005. In the next section, we examine how the Kenyan garment industry has fared over the last decade with particular emphasis to the AGOA enactment and the MFA termination.

### **2.3 African Growth and Opportunity Act (AGOA)**

The African Growth and Opportunity Act (AGOA) emerged out of the US government commitment to 'Trade, not aid', a discourse to African development assistance policy in the late 1990s. It represents the most far-reaching initiative, both in the history of US-

<sup>12</sup> For further details see Munir and Dinora (2008). Adhikari and Yamamoto (2007).

African economic relations, and more generally in relation to the claim that concessions in the area of trade provide better long-term prospects for developing countries' economic development than in aid (Gibbon, 2001). It is a preferential, non-reciprocal trade agreement between the US and approved sub-Saharan African (SSA) countries covering about 7,000 product lines, which are allowed access to the US market duty- and quota free (USTR 2007, McCormick *et al.* 2006, Rolfe and Woodward 2006). Crafted in the same approach as the US agreement with the Caribbean Basin and the Andean region, AGOA benefits have undoubtedly promoted private-sector direct investments flows and export competitiveness (Gibbon, 2003). The enactment of AGOA has particularly been resuscitated the clothing sector after the decline of the largely indigenous and local-market oriented clothing industry.

### 2.3.1 Origin and Enactment of AGOA

AGOA was signed into law on 18 May 2000 as Title I of 'The US Trade and Development Act of 2000' (AGOA I), with the objective of facilitating export-led growth in SSA. The Act extended GSP tariffs to a wider range of products and also encouraged trade liberalisation between the US and designated SSA countries. Initially intended to expire in September 2008, AGOA's provisions have been amended and expanded three times (see Box 2.1).

#### **Box 2.2: Amendments and Extensions of AGOA Provisions**

AGOA II: President Bush signed amendments to AGOA, also known as AGOA II, into law on August 6, 2002 as Sec. 3108 of the Trade Act of 2002. AGOA II substantially expanded preferential access of imports from beneficiary Sub-Saharan African countries.

AGOA III: The AGOA Acceleration Act of 2004 (signed by President Bush on July 12, 2004) extended preferential access for imports from beneficiary SSA countries until September 30, 2015; extended third country fabric provision for three years, from September 2004 to September 2007; and provided additional Congressional guidance on how to administer the textile provisions of the bill.

AGOA IV: The Africa Investment Incentive Act of 2006 (signed by President Bush on December 20, 2006) further amended portions of the AGOA. The legislation extended the third country fabric provision for an additional five years, from September 2007 to September 2012; added an abundant supply provision; designated certain denim articles as being in abundant supply; and allowed lesser developed beneficiary SSA countries to export certain textile articles under AGOA.

*Source: USTR, 2007*

Trade benefits under AGOA are not automatic to all SSA countries. Each qualifying country has to apply for eligibility and has to satisfy a range of extensive, normative and subjective criteria as outlined in section 104 of the Act. These include progress towards: (1) establishing a market-based economy, protection of private property, open rules-based trading system; (2) maintaining the rule of law and policies to safeguard property rights; (3) removing barriers to U.S. trade and investment, activities that undermine U.S. national security or foreign policy interest; (4) policies to reduce poverty; (5) policies to promote good governance and to combat corruption; (6) not to provide support for acts of international terrorism; and (7) compliance with the internationally recognized rights of workers, and elimination of the worst forms of child labour (McCormick *et al.* 2006, Rolfe and Woodward, 2005).

Once a country meets these criteria, it becomes eligible for AGOA benefits. On October 2, 2000, former US President Clinton designated 34 SSA countries as eligible for the trade benefits offered under the African Growth and Opportunity Act (Appendix 1). This proclamation by the then US President followed the expiry of the public comment period and an extensive interagency deliberations of each country's performance against the eligibility criteria established in the Act and approved by the US International Trade Commission (USITC). Kenya was among the first 34 SSA countries declared AGOA eligible and hence qualified for preferential market access under the AGOA on October 2 2000. Latest statistics indicate that as of December 2008, 37 SSA countries were designated AGOA eligible ([www.agoa.gov](http://www.agoa.gov)). The eligibility criteria for the Generalised System of Preferences (GSP) and AGOA substantially overlap, and countries must be GSP eligible in order to be eligible for AGOA. While GSP eligibility does not imply AGOA eligibility, the majority (45 out of 48) of Sub-Saharan African countries are currently GSP eligible but as indicated in Appendix 1, only 37 of these are also AGOA-eligible.

It is important to note that AGOA eligibility does not automatically imply eligibility to export apparel products which are covered by a different section of the Act – Apparel Provisions (See Gibbon, 2003; Rolfe and Woodward 2005; Morris and Sedowski, 2006; McCormick, *et al.*, 2006). This is because rules of origin for wearing apparel and some

textile items are covered separately by the 'Wearing Apparel' provisions as discussed below.

### **2.3.2 AGOA's Wearing Apparel Provisions**

Within the Apparel Provisions, AGOA provides beneficiary SSA countries with duty-free access to the U.S. market for apparel, subject to specific rules of origin and other administrative requirements through 2015. Preferential treatment for apparel took effect on October 1, 2000, but beneficiary countries must first establish effective visa systems to prevent illegal trans-shipment and use of counterfeit documentation, and that they have instituted required enforcement and verification procedures (Gibbon and Ponte, 2005). A Country wishing to export apparels to the US must make a separate application for eligibility and must in addition to meeting AGOA eligibility criteria meet extra customs-related criteria that prevent the re-export garments manufactured elsewhere.

In order to export apparel (and certain textile items) to the U.S. duty-free under AGOA, a country must have implemented a 'Visa System' to the satisfaction of US authorities and one that ensures compliance with the AGOA rules of origin so as to counter trans-shipment. In addition, the applying country must have a legislation that permits the US Customs Services access to its export records and also one that facilitates full cooperation with the US Customs Services. Another requirement is that a country must have appropriate record-keeping procedures and reports on manufacturing capabilities. The requirements of the visa systems and verification procedures were promulgated to African governments via U.S. Embassies on September 21, 2000.<sup>13</sup> As of December 2008, 27 of the 37 AGOA-eligible countries had complied with this condition and had obtained the necessary visa system, allowing them to export apparel products to the US market duty-free under AGOA (see Appendix 1).

In this regard, the AGOA preference is intended primarily for garments assembled in a beneficiary country using fabric from either the U.S. or an AGOA beneficiary country,

---

<sup>13</sup> The Act directs that the Secretary of Commerce monitors apparel imports on a monthly basis to guard against surges, which might cause serious damage to the US apparel industry. In such as case, the President has powers to suspend duty-free treatment for such articles in question (USTR, 2007).

subject to an annual limit (capping). Such limits are measured in Square Meter Equivalent (SME), and are set as a fixed percentage of all U.S. imports of apparel in the preceding 12-month period for which data is available. This annual limit was initially set at 1.5% of total U.S. textile and apparel imports, and was due to increase in equal annual increments to 3.5 per cent by the end of AGOA initially on September 30, 2008. However, this was doubled to 7 per cent in AGOA II which in effect represents a formidable opportunity to raise regional exports to the United States. Apparel made of yarns and fabrics not produced in commercial quantities in the United States; textile or textile articles originating entirely in one or more lesser-developed beneficiary SSA countries; certain cashmere and merino wool sweaters; and eligible hand-loomed, handmade, or folklore articles, and ethnic printed fabrics are exempted from the 'capping' rule.

Under a Special Rule for 'lesser-developed' beneficiary countries (those SSA countries with a per capita GNP under \$1,500 in 1998), the rule of origin was initially waived until September 30 2004, allowing them to use fabric from any other source (third-country fabric). Under AGOA III and AGOA IV, this special rule was extended to September 30, 2007 and September 30, 2012, respectively. Under AGOA IV Botswana, Mauritius and Namibia were designated as lesser-developed beneficiary countries and therefore qualified for the special rule of origin. On January 18, 2001, Kenya became one of the first two SSA countries (the other being Mauritius) eligible to benefit from the special rule for apparel and being classified as a lesser-developed country, it also enjoyed the derogation of the rule of origin. Duty-free access to imported inputs has been an important incentive for many investors in the Kenyan garment industry because it creates a competitive advantage. Consequently, most of the export-oriented garment manufacturing firms found in the EPZ were established to take advantage of this market access initiative. Although the third-country fabric rule has enabled SSA to continue exporting to the US market, it is criticized because of its short periods and the uncertainty surrounding its extensions. These have deterred concreted investment in most of the African countries, particularly in the textile segment of the industry (Rolfe and Woodward 2003).

### 2.3.4 Impact of AGOA on Trade between the US and Kenya

The envisaged benefits of AGOA to Kenya are many and can be attributed mainly to the 'Wearing Apparel' provisions that have boosted Kenya's garment exports to the US market. These benefits include job creation, increased access to the US market, greater foreign exchange earnings, technological transfer, improvement in basic infrastructure and the possibility of textile-driven industrialisation (Otiso 2004; Gibbon 2001). As a result of 'Wearing Apparel' provisions, textile and clothing exports have now become the Kenya's dominant export category to the US market, accounting for more than 90% of total exports between 2002 and 2008 (Table 2.2).

In addition, Kenya, having been classified as a 'Lesser-Developed' country, strengthened the export-oriented industry, which is dependant on imported fabrics and other raw materials. Currently, this waiver (otherwise called derogation of rules of origin) is valid until September 30, 2012. It is not clear if these provisions will be extended in which case, continued export to the US will require Kenyan firms to source raw from African AGOA countries or the US. Studies, have however shown that is not a very viable option (Ikiara and Ndirangu, 2004; Phelps, 2008). This certainly jeopardises Kenya's opportunity to compete with producers from low-cost producers from Asian countries.<sup>14</sup>

The trade between Kenya and the US expanded steadily between 2002 and 2004, but declined to US\$ 326 million in 2007, with only a marginal increment in 2008 (Table 2.2). The trade between these two countries has been in favour of the US for the entire period. For Kenya, duty-free exports under AGOA account for nearly 76 per cent of all exports to the US during the period, a clear indication of the significance of AGOA trade preferences (Table 2.2). Moreover, the textiles and apparel on average account for 95 per cent of total exports under AGOA, a further indication of the importance of this sector.

---

<sup>14</sup> See Kaplinsky et al. (2006), Morris and Sedowski (2006). Rolfe and Woodward (2005)

**Table 2. 2 Bilateral Trade between Kenya and the US 2002- 2008 (US\$ '000)**

	2002	2003	2004	2005	2006	2007	2008
<b>Textiles and Apparel</b>							
US Exports to Kenya	7,594	7,260	9,470	8,012	8,017	9,290	11,772
US Imports from Kenya	126,488	188,148	277,432	270,844	264,074	250,049	247,100
Total AGOA including GSP provisions of AGOA	121,881	176,286	271,580	266,648	257,896	245,813	244,775
US Imports under GSP from Kenya	10	8	97	38	50	129	31
US imports of duty-free items added under AGOA	121,870	176,280	271,483	266,610	257,846	245,685	244,744
<b>All Sectors</b>							
US Exports to Kenya	267,972	293,009	386,938	625,910	516,103	576,220	440,744
US Imports from Kenya	189,156	249,137	352,165	347,754	352,804	326,086	343,533
Total AGOA including GSP provisions of AGOA	129,210	184,441	286,688	278,267	272,911	255,012	255,655
US Imports under GSP from Kenya	4,873	3,842	6,790	6,163	7,860	4,660	3,412
US imports of duty-free items added under AGOA	124,337	180,599	279,898	272,131	265,051	250,532	252,243

Source: [http://www.agoa.info/?view=country\\_info&country=ke](http://www.agoa.info/?view=country_info&country=ke): last accessed on July 8 2009

It is clear that textile and apparel products constitute the largest share of Kenya's exports to the US. This has been as a result of special trade preferences provided by 'wearing apparel' provisions of AGOA. Imports of textile and apparel to Kenya from the US are comparatively small in value and mainly constitute second-hand clothes. In fact, AGOA has not only revitalized the clothing industry in Kenya, but it has also provided an impetus to new investments in this industry.

Kaplinsky and Morris (2008) argue that the effective rate of protection for SSA countries is actually higher than the nominal tariff rate and hence contributes positively to SSA countries' current performance. Given that SSA countries can import fabric from third countries, often China, the calculated effective rate of protection AGOA provides relative to China is between 27% and 84%, depending on the product. There has been a dramatic growth in garment exports to the US following the AGOA, which has put Kenya in the global map of textile and clothing (McCormick *et al.* 2006; Ikiara and Ndirangu 2004; Mattoo *et al.* 2003; Rolfe and Woodward 2005). Moreover, clothing exports from Kenya grew rapidly after the year 2001 when Kenya qualified for the special rule of apparel and the third country fabric.

According to Gibbon and Ponte (2005), in most cases new investments in the clothing sector following the AGOA enactment came from Asian countries, which were trying to access the US market from African countries whereby the MFA quotas were not being fully utilised. It is not therefore surprising that most of the export-oriented firms in the Kenyan EPZ have ownership originating from Asian countries. In addition to increased foreign direct investment, AGOA is accredited with improving the business environment to take advantage of the apparel provisions. For example, Lande, *et al.* (2005) and Naumann (2005) observe that investment in infrastructure has improved significantly. There has also been a significant reduction in the bureaucracy surrounding apparel production and general trade in some African countries resulting from AGOA.

The impact of AGOA and the termination of MFA on the SSA garment industry can be explained by trade statistics presented earlier in Table 2.1. Six countries became major clothing exporters to the US under AGOA, although three of them – South Africa, Mauritius and Madagascar – also had significant exports to other destinations. For some of the countries, exports rose rapidly in the first years of AGOA. For example, Kenya's total clothing exports were only US\$87 million in 2001, the first year of AGOA (Kaplinsky *et al.* 2007). By 2004, exports to the US totalled US\$ 277.2 million representing 95% of the country's clothing exports (Kaplinsky *et al.* 2007). The experiences of Lesotho and Swaziland were similar, with total exports rising rapidly between 2001 and 2004. Nearly all of the clothing products entered the US duty-free under the provisions of AGOA. In part, this rapid rise in clothing exports was made possible for all three countries by the temporary derogation of AGOA's rules of origin.

Mauritius and Madagascar present a somewhat different picture. Total exports of clothing and textiles from both countries increased only slightly between 2001 and 2004: by 5 per cent in the case of Mauritius, and 11 per cent for Madagascar. Unlike the other three countries, the US share of these exports is small. Only 15 per cent of Mauritius' clothing and textile exports went to the US in 2004; for Madagascar the share was 45 per cent (Kaplinsky *et al.* 2007). South Africa did not make significant growth in the clothing exports to the US under AGOA partly because of the stringent rule of origin that it faces in this market. Nonetheless, exports of clothing and textiles increased by 33 per cent 2001

and 2003; but declined more drastically from 2004 to stand at US 45.9 million by 2008, a decline of 80 per cent from the 2003 figures.

A huge gap exists between the five major exporters and the others that are qualified but export less than US\$ 20 million per year. Ethiopia and Tanzania represent countries that have apparently had much less success in accessing the AGOA market (McCormick, et al., 2009). Each country's total AGOA apparel exports amounted to less than US\$10 million in 2008 ([www.agoa.info/index.php?](http://www.agoa.info/index.php?)). What is interesting, however, is that Ethiopia's exports have grown steadily, while Tanzania's peaked in 2005 before declining steadily.

#### **2.4 Regional Trade Policies and the Kenyan Garment Industry**

Africa is a huge continent of 53 states. With a population of about 800 million people, projections indicate that by 2025, the population will be more than 1.5 billion. If well tapped, this could offer a huge market for Kenyan garment products. However, high poverty levels erode the purchasing power of consumers while poor infrastructure undermines efforts to supply this market (Dickerson, 1999). Until 1980s, Kenyan apparel fared well in the regional markets such as Uganda and Tanzania, and to a limited scale in Rwanda, DRC and Burundi. However, following the liberalisation of trade in these economies, Kenya's competitiveness was undermined forcing many firms to retract back to the domestic market. The import of second-hand clothes from industrialised countries as well as new, cheaper clothing from Asian countries appear to have further undermined Kenyan firms' effort to remain in these markets (McCormick, 1999; Kamau 2007). Local firms have only recently re-entered this regional market.

Regional integration through the Preferential Trade Agreement (PTA) of 1983, Common Market for East and Southern Africa (COMESA) of 1999 and the revival of the East African Community (EAC) in 1996 has not adequately addressed manufactured apparels (World Bank, 2007; Phelps, *et al.*, 2009). A study by Ikiara and Ndirangu (2004:264) recommended that there was considerable room for regional collaboration, especially within the EAC and COMESA, to develop a regional cotton-textile apparel chain that exploits the relative comparative advantages in different countries (Lande, *et al.*

2005:34). In this regard, Ikiara and Ndirangu (2004) proposed that countries like Malawi, Uganda and Tanzania could concentrate on production of seed cottons - areas where they have comparative advantage.

In such an arrangement, Tanzania and Malawi could produce cotton and export it to Uganda for processing. Uganda with its competitiveness in textile manufacturing resulting from relatively cheaper electricity, can supply the region with fabrics. In fact, Uganda has one of the largest modern mills in the East African region, which if well utilised has the capacity to produce enough fabrics for use in the region. Finally, Kenya could under such arrangement, be in charge of garment manufacturing where since it has developed supply capabilities. However, Phelps, *et al.* (2009:322) argue that in order to realise this regional collaboration, there is need for greater commitment to regional, economic and political stability which at the moment is low if not absent. The ability to coordinate any such arrangements at a regional level is impeded by perceived lack of capacity by governments and the industry-level institutions concerned.

Several garment manufacturing firms have made a comeback into the regional market after a drastic set back in the 1990s. Interestingly, the approach to penetrate the regional market has taken a different dimension from what it was prior to economic liberalisation. Instead of selling standard garment, firms are targeting niche markets such a military and corporate uniforms, as well as tourism industry.

## **2.5 Domestic Trade Policies and the Garment Industry in Kenya**

The textile and clothing industry has been central in the Kenyan industrialisation process. Available evidence suggests that the industry flourished under the 'import-substitution' industrialisation (ISI) strategy common to developing countries of that time (Ikiara and Ndirangu, 2004; McCormick *et al.*, 2007). As in other countries, ISI worked well in its early years but ran into difficulties as the heavily protected industry grew complacent and settled into inefficiency as evidenced by the sluggish growth of total factor productivity and labour productivity (Kimuyu, 1999). At the beginning of the 1980s, it was apparent that ISI had failed to deliver the much-needed industrialisation. As a result a shift towards

a more outward looking industrialisation strategy was needed. However, with the shift of trade policies to export-promotion, the garment industry crumbled. It is not until the enactment of AGOA in 2001 that a new wave of export-oriented garment industry emerged.

### **2.5.1 Garment Industry under the Import-Substitution Industrialisation Policy**

The quest for industrialisation on attaining independence led the government to embark on an ISI, whose strategy was inward looking; seeking to produce locally what was previously imported; and to protect local producers from competition (McCormick *et al.* 2007; Bigsten 2002). The textile and clothing industry was one of the industries earmarked for this strategy. During the first decade of independence, total manufacturing output increased by almost 10 per cent which somehow indicated that the ISI policy was working well (see Kimuyu 1999; McCormick 1999; Omolo 2006). The main policy instruments for the ISI strategy included a combination of tariffs and import quotas supported by foreign exchange allocation measures (Kimuyu, 1999:165). The exchange rate was also overvalued to contain costs of imported raw materials; in addition, credit and interest rates were implicitly subsidized for manufacturing enterprises.

The textile and clothing industry developed into a leading manufacturing activity in Kenya, both in terms of size and employment. By the 1980s, it employed about 30 per cent of the total labour force in the manufacturing sector and was ranked second to the civil service in employment creation (Republic of Kenya, 1986). At that time, the industry supported the livelihoods of over 200,000 small scale farmers by providing markets for cotton (Republic of Kenya, 1986). During the ISI, the government for instance helped cooperative societies to buy ginneries from colonial settlers, controlled marketing margins, fixed producer prices and invested heavily in textile mills.<sup>15</sup> The ISI strategy rested on the 'infant industry' argument, which advocated for domestic production of import substitutes through protection of local industries. The instruments of protection included duty drawbacks, quantitative restrictions, high tariffs on competing

---

<sup>15</sup> For details see Kenya, Sessional Paper No. 1 of 1986, and the Position Paper on the Textiles Industry of 2001.

imports, over valued exchange rates as well as broad-based economic controls that subsidised the industrial sector (Kinyanjui *et al.* 2004:195).

Although the ISI policy was initially successful, its scope was eventually exhausted so that by the mid-1980s, textile and clothing manufacturing output almost stagnated. As discussed earlier, the growth of this industry was generally hampered by inefficiency in production, sub-optimal plant sizes, outdated technologies relative to those in use by competitors, limited technological process and underutilisation of installed capacity brought about by the existing protection measures (Glenday and Ndii 2003, Bigsten and Kimuyu 2002). It was therefore apparent that this industrial policy required some restructuring. On advice from the World Bank and the IMF, the government shifted the trade policy from ISI to EOI whereby the latter aimed at reducing dependence on a narrow range of commodity exports and to relax the foreign exchange constraint (Republic of Kenya, 1994:148).

### **2.5.2 Garment Industry under the Export-Promotion Industrialisation Policy**

During the 1980s, the government introduced structural adjustment programmes (SAPs) aimed at strengthening the competitiveness of the industrial sector (Kenya, Economic Survey 1994). These included virtual removal of price controls, trade liberalisation, removal of foreign exchange licensing, and rationalisation of tariff regimes (see McCormick 1998; Bigsten and Kimuyu 2002). In essence, the aim of SAPs was to remove the anti-export bias inherent in the past ISI policies. This paradigm shift was mainly informed by development literature, which argued that an EOI policy generates efficiency gains (Kimuyu 1999; McCormick, 1999; Ngui 2008; Lundvall *et al.* 2002). Although the export premium often reflects the self-selection of more efficient firms into the export markets, it could also be due to the fact that exporting enables firms to exploit scale economies and benefit from the learning-by-exporting.<sup>16</sup> Besides, it was expected that shifting of industrial policy would address the structural rigidities that were evident in the manufacturing sector (Lundvall and Battese, 1998). According to Lundvall *et al.*

---

<sup>16</sup> Drawing lessons from the newly industrialised economies, consensus was building up to the effect that export-oriented policies were critical for industrial development (Kimuyu, 1999; Kinyanjui, *et al.*, 2004; McCormick, 1998).

(2002) and Bigsten *et al.* (2004), exporting was expected to generate productivity gains by enabling inexpensive technological transfer from producers in developed countries to those in developing countries. The implementation of SAPs was among other objectives meant reduce disincentives to export and build export competitiveness, as well as improve the efficiency of the industrial sector.

In order to promote the competitiveness of the industrial sector and reawaken concern for the dwindling domestic market, the government in 1986 established several export promotion programmes. This was in response to a deteriorating export performance, when merchandise export earnings as a percentage of GDP declined from 19.6 per cent in the 1970s, to 16.97 per cent over 1980-84, and 13.6 per cent over 1985-89, reaching an all time low of 11.5 per cent in 1987 (Economic Survey, 1994). There was therefore an urgent need to create incentives to promote exports.

Export platforms often cited as critical elements of successful entry into export markets became integral components of EOI policies. The central purpose of such schemes was to allow producers to access production inputs at 'world' prices. From a theoretical point of view, exporters only earn 'world' prices from exports. Lowering the cost of tradable inputs to world price levels is however considered important in creating export price competitiveness. Alternatively, analysts argue that export promotion schemes aim at removing any *negative* trade protection for exports (Ngui 2008; Glenday and Ndii 2003). Four major export promotion schemes have so far been established in Kenya:

- 1) *Export Promotion Programme Office (EPPO)*
- 2) *Export Compensation Scheme*
- 3) *Manufacturing- Under-Bond (MUB)*
- 4) *Export Promotion Zones (EPZs)*

In the following subsections, we discuss how each on of these schemes worked. It is worth mentioning that the first two schemes have since been abolished. Only the last two are in operation today.

### **2.5.2.1 Export Promotion Programme Office (EPPO)**

The first step towards promotion of export-oriented manufacturing started in the mid-1970s with the establishment of the Export Promotion Programme. This programme was initiated to promote local production of inputs for export-oriented manufacturers. As part of this scheme, all enterprises producing for exports or for duty-free domestic market sale were exempted from duty and/or VAT on materials imported for production of such goods (Kimuyu, 1999:68). This scheme was administered through the Export Promotion Program Office (EPPO).<sup>17</sup> However, the implementation of this scheme was not effective because of lack of clear guidelines as to which enterprises were to benefit. It was marred with abuse and misuse of funds. As a result, the scheme failed to trigger manufactured exports in Kenya (Bigsten, 2002). In addition, the EPPO seems to have suffered from administrative problems leading to further allegation of corruption and abuse. The scheme was subsequently under-funded resulting in delays in the processing of claims. This programme was eventually phased out in 1994.

### **2.5.2.2 Export Compensation Scheme**

The Kenya's Customs and Excise legislation had a provision for drawing back the import duty content of manufactured exports, which was not effectively utilized, in part because of the demanding administrative requirements of setting up a duty drawback programme. In 1984, under the Local Manufactures (Export Compensation) Act, this was restructured to provide flat rate compensation on selected manufactured exports. Under this programme, any exporter of eligible goods could claim export compensation payment based on the custom's value of the export at an applicable compensation rate of 10 and 20 per cent of the value (Economic Survey, 1994). These payments were made against customs, shipping, and banking documents showing that eligible goods had been exported and the foreign exchange earned repatriated into the country (McCormick *et al.* 2007:206). The criterion for compensation was inclined towards manufactured goods with reasonably high domestic value addition, so that the scheme excluded all natural resources and agricultural produce. As with the previous scheme, the tendency for abuse

---

<sup>17</sup> See also McCormick *et al.* (2007), Glenday and Ndi (2003), Bigsten & Kimuyu (2002), McCormick (1999).

was high and resulted in one of the worst the worst financial scam –Goldenberg scandal- that swindled the economy billions of shillings.

This programme was again phased out in September 1995, on several grounds as outlined by Mwega and Ndungu (2001). First, some exports were over-compensated while others like garments were significantly under-compensated. Second, the scheme benefited a few large firms which typically accounted for less than 5 per cent of total exports. Third, the scheme amounted to prohibited subsidies which could have been countervailed by an importing country under the WTO/GATT rules (Glenday and Ndi, 2003). Finally, the scheme opened gates for corruption deals which ripped off the country huge amounts of money through dubious export claims.

### **2.5.2.3 Manufacturing –Under- Bond (MUB)**

The MUB was started in 1987 to promote export-oriented manufacturing. Under this scheme, manufacturing enterprises were allowed duty-free importation of plant, equipment, spares, and raw materials to manufacture goods for export. However, these factories had to be customs bonded to ensure that all products produced are exported, and that none of the products were sold in the domestic market. Other incentives offered under this scheme included favourable income tax treatment of capital expenditures, exemption in value-added-tax (VAT), and exemption from import duty on all input purchases. These firms were supposed to pay taxes only after investment costs were fully recovered (Kenya, 1994). Initially, incentives under MUB programme were limited to new factories but were later on extended to firms already in operation but which wanted to be customs bonded. The MUB Act vested the power of registration to a semi-autonomous department in the Ministry of Finance – Investment Promotion Council (IPC).

The idea was to promote local manufacturers, focusing on export markets. In case a firm registered as a MUB wished to sell products locally, it could do so only after paying duties and VAT, and more importantly, after getting the approval of the Commissioner of Customs. Although sales into the domestic market are subject to the same duties and

taxes applicable to imports, they are discouraged given the fact that the duty exempt on plant, machinery, equipment, and spares conferred an undue advantage to MUB firms over regular domestic factories. Under this programme, a Customs' Officer is required to physically verify inventories of imported raw materials, manufactured products, waste, and scrap material, as opposed to the "off-site" accounting controls. This in turn required factories to meet the physical specifications of a bonded warehouse. The MUB Act does not restrict physical location and a firm could be registered anywhere in the country. The argument was that the Customs Department had officers to inspect the factories at desired locations. This created a loophole with dubious firms directing some of their products without necessary authorisation. In some cases, it is alleged that firms colluded with customs officers to divert goods into the local market instead of exporting.

Manufacturing firms wishing to produce under MUB do so by applying through the Investment Promotion Centre (currently, Kenya Investment Authority) to the Ministry of Finance for a single MUB (one-stop shop) permit. Most firms sought the assistance of Kenya Investment Authority (KIA) during the registration which was then quite bureaucratic. In principle, the KIA was supposed to oversee operation of registered firms and update information regarding their operations, but that has not been practical due to a shortage of the human resource (Fieldwork, 2006). As a result, KIA only maintains records of firms that registered with KIA at the inception stage. Otherwise, there are no records to show whether those firms registered under this programme are still operational, have changed their operations or whether they have since closed down. Moreover, it was not mandatory for all projects to register through the KIA and therefore existing records could be an under misleading.

This programme showed considerable potential for supporting garment manufacturing in its early days of operation. Garment firms in this scheme accessed world markets such as the US and Europe (Bedi Investments, 2006). The scheme however suffered a major setback when, in 1994, when the U.S. Trade Office revoked Kenya's quota for items such as shirts, tee-shirts and pillow-cases, citing trans-shipment of garments originating from other countries through Kenya. As a result of this action the number of MUB firms decreased from about 70 in 1994 to only 10 in 1997 (Kinyanjui *et al.* 2004). In addition, the appreciation of the local currency against world currencies in 1990s and the rising

wage rates in Kenya somewhat eroded production margins for producers under the MUB programme. At the time the fieldwork in 2006, the number of garment firms in this scheme had declined to five (5) with a combined employment estimated at 4,000 workers (Interview with KIA, 2006).

#### **2.5.2.4 Export Processing Zones (EPZs)**

Kenya inaugurated her Export Processing Zones program in 1990 as part of the Export Development Program (EDP) initiated by the Government to transform the economy from an import substitution to an export led growth. EPZs are designed to further integrate Kenya into the global supply chain and attract export-oriented investments in the zones, thus achieving its economic objectives of job creation, diversification and expansion of exports, increase in productive investments, technology transfer and creation of backward linkages between the zones and the domestic economy. The scheme was established through the Export Processing Zones Act (CAP 517), Laws of Kenya passed in 1990 to provide greater incentives so as to attract foreign direct investment, and to promote manufactured exports.

The Act defines an export processing zone as "...a designated part of Kenya where, goods produced are generally regarded, in so far as import duties are concerned as being outside the customs territory but are duly restricted by controlled access..."(Kenya, 1990). The objective of this programme is to promote exports, foreign exchange earnings, foreign direct investments, transfer of technology and skills, employment creation, and enhancement of industrialisation (Kenya, 1990). To begin with, EPZ were established in Nairobi, Athi-River and Mombasa, but later on extended to other regions of the country such as Eldoret and Kerio-Valley, even though garment activities are still confined in Nairobi and Mombasa regions. A completed zone consists of factory buildings, facilities for warehousing, banking services, insurance services and on-site Customs offices (EPZA, 2008).

The programme provides a generous incentive package, tailored to attract foreign direct investments. Some of the incentives include:

- i. A corporate tax holiday for the first ten years of operation and thereafter a corporate tax not exceeding 25 per cent.
- ii. Exemption from all withholding taxes on dividends and other payments to non-residents during the first ten years;
- iii. An import duty and VAT waiver on imports of plant equipment and raw materials (except for motor vehicles and motor vehicle spare parts);
- iv. An exemption from foreign exchange controls.
- v. An expedited licensing at reduced business license fees and permission to operate under single licence.
- vi. Manufacturers in the EPZ program are exempted from rent and tenancy controls.
- vii. Unrestricted foreign ownership and employment of expatriates for technical staff.
- viii. Freedom to repatriate unlimited earnings.
- ix. Exemption from observing some core labour laws and regulations such as Trade Union (not until 2003) and Factories Act (CAP 514).<sup>18</sup>
- x. No restrictions on management or technical arrangements
- xi. Exemption from stamp-duty on all transactions.

EPZs have been heralded as special purpose corporations that can only do business in a designated EPZ location, which may be a single factory or a unit in an EPZ industrial park, supervised and licensed by the EPZ Authority (Republic of Kenya, 1990). Although the programme targeted new foreign direct investment, Kenyan companies are allowed to establish EPZ subsidiaries. However, they are not allowed to combine EPZ production activities with non-EPZ activities (Glenday and Ndi, 2003; Bigsten, 2002). Specific provisions were also introduced into the Income Tax Act to prevent "tax straddling" between EPZ enterprises and related domestic companies through transfer pricing. For example, a domestic company providing administrative services to a related EPZ company may not charge the services against the taxable income of the domestic

---

<sup>18</sup> See Kenya (1972, 1980) for details of the Factory Act: and the Regulations of Wages and Conditions of the Employment Act, respectively.

company, or shift taxable income into the tax free EPZ Company by under-invoicing for services rendered.

For customs purposes, an EPZ is regarded as being outside the customs territory. Sales from Kenyan businesses into an EPZ are treated as exports, and sales from the EPZ to Kenyan businesses are treated as imports for duty and VAT purposes (McCormick et al. 2007; Lande *et al.* 2005). There is no limit on sales into the domestic market, but such sales would be regarded as imports and therefore be subjected to regular import duties and taxes. The duty exemption on capital equipment and the income incentives, however, give an EPZ company an advantage over other domestic producers supplying the local market. To discourage abuse of the access to the domestic market, the EPZ Act provides for an additional duty of 5 per cent on the value of domestic sales originating from EPZ firms (Glenday and Ndi, 2003).

Within the regional trade agreements, EPZs are considered to be outside the customs territory of the host country. Therefore, goods originating from an EPZ firm may not enjoy tariff preferences available to other producers in the regional market under the COMESA rules of origin. Thus, EPZ exports would attract a higher tariff rate in the regional COMESA market as per the rules of origin which is estimated to be about 80 per cent higher than what other producers in the region pay. This may explain why none of the EPZ firms exports to the regional market.

Stacked up against these incentives is a range of potential additional costs that may discourage entry into an EPZ. First, the requirement of export dedication exposes the EPZ firm to risk of excess capacity. Second, a firm must incur the bureaucratic costs of convincing the EPZ Authority to gazette its chosen location (Glenday and Ndi, 2003). Otherwise, if a firm does not obtain permission from the authority, the EPZ status will restrict choice of location, which can influence transportation costs, access to labour, rental cost of buildings and cost of utilities (Bigsten, 2002). Third, involvement in an EPZ may expose the business of a firm both inside and outside the EPZ to greater scrutiny by tax officials and also to program compliance costs. Entry into an EPZ essentially puts a business into the formal sector, which may not be attractive to the light or "sweatshop" manufacturing that prefer to operate at lower costs in the informal sector

(Omolo, 2006; McCormick *et al.* 2007). In 2005, upfront duty payment was introduced for all petroleum products, including those destined for the EPZ firms. Then, an EPZ firm would apply for VAT and duty refund from the Kenya Revenue Authority (KRA) which can take at least six months to process (McCormick, *et al.* 2006). This has resulted in huge sums of working capital being held by the KRA to the detriment of the EPZ firms.

Although EPZ firms are spread across many parts of the country, the garment production activities are concentrated in Nairobi, Athi-River and Mombasa zones (EPZA, 2008). The existence of an EPZ programme in Kenya was a major attraction of garment FDI following Kenya's AGOA eligibility in 2001. As indicated in Table 2.3, garment production performance improved significantly from 2001. Garment activities account for more than 60% of all EPZ activities and employs more than 75% of the labour force in the zone.

**Table 2.3: Performance of the Kenyan EPZ Clothing Sector, 2000 – 2008**

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Number of Enterprises	6	17	30	35	30	25	25	22	19
Employment (Number)	5,565	12,002	25,288	36,348	34,614	34,234	31,317	28,506	25,776
Expatriates (Number)	211	282	630	820	753	720	584	460	383
Exports (US\$ Million)	30	55	104	146	221	195	207	205	201
Investment (US\$ Million)	16	48	88	128	108	132	143	123	118
Number of Visas Issued (Including AGOA)	983	1,060	1,986	2,979	4,185	4,867	4,932	5,041	n.a.
Average Unit Price (US\$)	4.96	4.82	4.19	4.30	4.26	3.66	3.47	3.44	3.13
Exchange Rate (Kshs/US\$)	76.2	78.6	78.7	75.9	79.3	75.6	72.1	67.3	68.79

*Source: Compiled from EPZA 2009, McCormick, et al. 2006*

The number of garment firms operating under the EPZ program increased from a low 6 in 2000 to an impressive 35 firms in 2003 but began a sharp decline in 2004, reaching 22 by 2007. By 2008, there were only 19 firms operating as EPZ in the garment industry. The main reason given by respondents for the closure of firms in 2004 included the apprehension about the termination of MFA, which became effective in 2005 and also the

concern about the AGOA derogation of rule of origin, which was initially meant to end by September 2004.<sup>19</sup>

Since then, the industry has not operated anywhere close to the levels witnessed between 2003 and 2004. 2007 saw a slight improvement in the performance of the industry. This period was characterised by cut-throat market competition and high cost of production (EPZA, 2008). The number of workers in the industry has followed a similar trend; from about 5,000 employees in 2000 to approximately 36,000 in 2003, but started to decline in 2004. By 2007, the number of workers was estimated at 28,506. By 2008, the employment figure in the industry stood at 25,776 workers. In contrast to other garment firms in SSA countries, the Kenyan EPZ has a small number of expatriate workers. Indeed, expatriate workers account for less than 5% of employees in the industry. They mainly work in technical and managerial positions (Table 2.3). Since none of the expatriate workers are employed as operators or supervisors, it can be argued that at least, the EPZ programme has facilitated the creation of desperately-needed employment as set out in one of the EPZ objectives.

Clothing exports from the EPZ programme increased steadily between 2000 and 2004 from US\$ 30 million to US\$ 221 millions, respectively. A decline was however witnessed from 2005, which can be attributed to the termination of the MFA. By 2007, exports stood at US\$ 205. Investment increased steadily between 2000 and 2006, from US\$ 16 million to US\$ 143 millions but declined slightly in 2008 to US\$ 118 million. This study argues that between 2004 and 2006, even though some firms became insolvent, those that remained operational geared up for the new competition by investing in modern technology and by upgrading their machinery. By 2007 three large EPZ firms closed down their operations in Kenya resulting in a decline in investment.

The termination of MFA occurred at a time when the Kenyan shilling was appreciating against most of the world currencies. In fact, between 2004 and 2007, the Kenya shilling appreciated by 15 per cent against the US Dollar; further constraining the performance of the industry (Table 2.3). Given that the industry relies heavily on imported raw materials

---

<sup>19</sup> A more detailed analysis of the AGOA and the MFA termination is provided Section 2.4 and 2.5 of this thesis.

and the fact that sales are paid for in foreign currency, this appreciation of the shilling against the US Dollar eroded the already dwindling profit margins.

Under AGOA, eligibility to export apparel products requires implementation of an effective visa system and an enforcement mechanism to prevent illegal transshipment (USTR, 2007; McCormick *et al.*, 2006; Rolfe and Woodward 2005). In Kenya, the issuing of AGOA visas to manufacturers is conducted by the Kenya Association of Manufacturers (KAM). From Table 2.3, it is clear that the number of AGOA visas issued grew five-fold between 2000 and 2007, from 1,060 to 5,040. A visa in this sense describes the products a consignment being shipped to the US and also acts as a proof of at least singled transformation. It also describes sources of raw materials used in the production process.

The average price gives an important indicator of competitive status of Kenyan apparel in the US. Rolfe and Woodward (2005:15) for example compares unit price per dozen of exports from African countries with the unit price for the same type of garment from China and India, two of the largest garment producers in the world. They conclude that unit prices of the exports from Kenya are approximately equal to the corresponding unit prices from Asian producers. According to Rolfe and Woodward (2005) this does not imply that Kenya is as competitive as China and India; rather it is an indication that Kenya is involved in simpler designs, with less embroidery and minimal ornamentation. From Table 2.3, it is observed that the average unit price for Kenyan exports declined from US\$ 4.96 in 2000 to 3.44 in 2007 representing a fall of 31 per cent. This is a clear indication of how producer prices have been squeezed by powerful buyers and retailers in the context of increased competition. Manufacturers have responded to this squeeze by reducing labour costs, setting high production targets for workers, and also casualisation of labour contracts (see for example, Adhikari and Yamamoto 2007; Nordás, 2005; McCormick *et al.* 2006; Phelps *et al.* 2008).

## 2.6 Current Profile of the Garment Industry in Kenya

The Kenyan clothing industry is quite diverse in terms of size, ownership, technology, and market orientation. It consists of micro, small, medium, large and very large firms, which form a pyramidal structure with three tiers.<sup>20</sup> The base of the pyramid is occupied by the micro and small enterprises (MSEs) that produce mainly for the domestic market. By 2003, it was estimated that there were about 6,000 enterprises in this tier (McCormick *et al.* 2007).<sup>21</sup> Micro and small enterprises are the backbone of garment production in Kenya, are spread throughout the country, and represent about 15 per cent of all micro and small enterprises, and over one-third of the manufacturing MSEs in Kenya (CBS *et al.* 1999). A typical firm is run by the owner and one or two other workers. Typically, the ownership of these firms is dominated by Kenyans of African origin, mainly women. Estimates suggest that women own two-thirds of these firms (McCormick 2001; McCormick *et al.* 2007, 2002). The proportion of female ownership was higher in urban areas than in rural areas, where male tailors' representation was strong. Firms in this tier were classified into three types: custom tailors, contract workshops and mini-manufacturers (McCormick *et al.* 2007). Custom tailors produced 'made-to-measure' garments for individuals, often using fabric supplied by the customer. Contract workshops produce in 'quantity to order', while mini-manufacturers produce 'quantity for the market' (Kinyanjui and McCormick, 2003).

The next tier consists of medium to fairly large firms that produce mainly for the domestic market, with some producing for the export market, especially within the region. Included here are some of the firms established during the import-substitution era survived liberalisation. With employment size of between 50 and 100 workers, majority of these firms rely on the domestic market. However, some of them are venturing into the regional and the EU markets. The number of firms in this category is not known but

---

<sup>20</sup> The size categorisation of garment manufacturing firms draws from McCormick *et al.* (2007) who uses the number of workers to classify firms as micro (1-9 workers), small (10-49 workers), medium (50-99 workers) and large (100 or more workers).

<sup>21</sup> This is the most recent and updated survey of micro and small garment enterprises in Kenya, which was based on the approach of the CBS *et al.* (1999).

anecdotal sources indicate that there could have been approximately 100 firms in 2006 (Fieldwork, 2006).<sup>22</sup>

The third tier consists of large to very large export-oriented and foreign owned firms. In 2000, there were 15 such firms, mainly located in Nairobi or Mombasa. By 2003, this number had tripled, mainly in response to AGOA trade preferences whereby majority of them operated within the export processing zones (McCormick *et al.* 2007; McCormick *et al.* 2006). With employment ranging between 100 and 3,000 workers per firm, most of the firms in this category undertake cut-make- and-trim (CMT) orders. Most of them are foreign-owned and/or subsidiaries of foreign firms. They mainly undertake assembly work for US-based buyers. In this type of globalised production, buyers located in the US develop designs and source for raw materials. The work of the local manufacturer is limited to making garments according based on the designs presented to them (Gereffi, 2003). In 2003, this tier consisted of approximately 35 firms, most of which operated in EPZ; but this number has since declined to 27 firms (see Table 2.3). Most of the firms in this tier are new compared to firms in the other two tiers having been established between 2000 and 2003. Most firms in the medium- and large-scale category are registered as private companies with no obligation to divulge financial information.

The textile and clothing industry developed into a leading manufacturing activity in Kenya, both in terms of size and employment, a success that can be traced to the ISI policy (Omolo, 2006; McCormick, *et al.* 2006; Ikiara and Ndirangu, 2004). However, market liberalisation meant to create competitiveness of the industry gave rise to more challenges. The rapid liberalisation of the market for cheap textiles brought about heavy adjustment costs, including a dramatic drop in aggregate output of almost 50% which, in turn, had implications for capacity utilisation and productivity (Lundvall, *et al.* 2002). Overall production dropped sharply between 1992 and 1997 (see Figure 2.1).<sup>23</sup> By 1997, the production index stood at only 40% higher than it had been two decades earlier.

---

<sup>22</sup> Ferrand (1998) in his thesis, 'Missing Middle', concentrates on this category of firms but underscores the fact that there are no existing statistics of this category of firms in Kenya (Ferrand, 1998: 15).

<sup>23</sup> The computation of the production index in Figure 2.1 excludes production by the EPZ and MUB firms, which are considered to be outside the Kenyan customs territory (Discussion with K&NBS, 2009).

Many of the factories (including the textile factories) had closed down; others had shifted production into new lines that did not have to compete directly with imports (McCormick *et al.* 2007; Kinyanjui *et al.* 2004; Bigsten and Kimuyu, 2002). The share of the two industries in total wage employment in the manufacturing sector declined from a high of 18.6% in 1985 to 14.7 % in 1997. The clothing industry seems to have suffered disproportionately from market liberalisation. Thus, while the production index for the entire manufacturing maintained an upward trend, albeit an almost flat one, that of clothing dipped substantially between 1993 and 1997. Some of the factors responsible for the drastic decline in the clothing industry include the failure of the cotton sector, increasing use of synthetic fibres, influx of second-hand clothes, and a worsening operating environment – high production costs, poor infrastructure and insecurity (Ikiara and Ndirangu, 2004). The clothing industry recovery that started in 1998 was slow; and it was not until 2005 that its production index equalled that of the entire manufacturing industry.



**Figure 2.1: Quantum Index for Clothing & Total Manufacturing 1990-2008 (1976=100)**  
*Source: Kenya, Economic Survey (Various Issues)*

The enactment of AGOA in 2000 created a new momentum in the industry, especially in the export-oriented segment. This appears to have had a trickle-down effect on the local garment manufacturing firms, some of which have been getting subcontracts from local EPZs. However, the MFA termination, which has negatively affected the export segment, seems not to have severely affected the domestic sector, whose production index has continued to grow. The clothing production index appears to have increased drastically

between 2004 and 2008, a trend which is contrary to expectations, particularly in the light of the MFA termination. The index actually rose from 188 in 2003 to 457 in 2008. According to one informant, this is attributed to a few local firms getting big orders for the manufacture of military and corporate uniforms for the African regional market.

### **2.6.1 Production Activities in the Garment Industry**

A textile industry can be broken into three main product groupings: fibres, intermediate components and final products (see Dickerson, 1999). Fibres provide the raw materials for the textile industry and can be classified either as cotton, wool or manufactured fibres. These types of fibres are spun into various types of thread and yarn (see McCormick *et al.* 2007:1998 ff). Fibre products are then used to make intermediate components, including thread and cordage, as well as woven and knitted fabric. The fabric usually requires additional dyeing and/or finishing to make it suitable for consumer use. Finally, the intermediate components are made into end products. Of these, apparel is the largest user of fabric, followed by industrial and other consumer products, and interior furnishings, such as curtains, upholstery, and bed sheets. Carpets and rugs are made directly from fibre. It is estimated that apparel takes about 50 per cent of all textile production (Dickerson, 1999).

Kenyan textile and clothing firms produce a wide range of products. Spinning firms produce yarn and sewing thread while integrated mills produce yarn, fabric (knitted and woven), canvas, blankets, shawls, uniforms, towels, nappies and knitted garments. Some textile mills have integrated operations from yarn spinning through fabric finishing, while others specialise in a few activities. This segment of textile industry was worst hit by market liberalisation and has been on a decline since the early 1990s (see Ikiara and Ndirangu, 2004).

The most vibrant segment of the textile industry is apparel manufacturing, which produces garment products for final consumption. The main input in the apparel production is fabric – classified as either woven or knitted – as well as thread and cordage, which are produced by textile firms. Firms in Kenya specialise in knitted as well

as woven garment products, while a majority combine both. Knitted fabric follows a meandering path, forming symmetric loops that allow garments to stretch easily in different directions. As such, knitted garments have high elasticity and can stretch as much as 500 per cent depending on the yarn and knitting pattern. Knitted garments are often more form-fitting since their elasticity allows them to follow a body's curvature. In knitted garments, extra curvatures can be introduced without seams, as in the heel of a sock. Examples of knitted garments include cotton t-shirts, polo-shirts, ladies' tops, sport's wear, babies' cotton-knit sun suits and socks.

Woven garments on the other hand are made from fabric formed by weaving. Threads are always straight, running parallel either lengthwise or crosswise. It only stretches in the bias direction (between the warp and weft directions), unless the threads are elastic, such as spandex. Even then the stretch is minimal compared to knitted garments. Introduction of a curvature in most woven garments can only be done with sewn darts. Woven cloth usually frays at the edges, unless measures are taken to counter this, such as the use of pinking or hemming. Thread used in weaving is usually much finer than the yarn used in knitting, which give the knitted fabric more bulk and less drape than a woven fabric. Examples of woven garments include men's cotton trousers or shorts, suits, kaunda suits, women's cotton skirts, dresses, cotton shirts, blouses and men's pyjamas. The distinction between knitted and woven garments is used in determining tariff schedules, whereby knitted apparels are classified as HS-61 and woven garments as HS-62. Woven garment products dominate the Kenyan export trade, particularly to the US market; while in the domestic market, the share is almost equal.<sup>24</sup> Technology varies considerably among clothing firms in Kenya, with foreign-owned firms generally using modern technology, while local firms combine both modern and old technology. Assembly processes also differ significantly across firms with some adopting make-through while others use assembly line processes.

---

<sup>24</sup> For garment trade data between Kenya and the US, see Kamau (2007).

## 2.6.2 Sourcing of Raw Materials and Machinery

The acquisition of raw materials has a strong impact on value-addition and, by extension, the extent to which garment production activities generate real economic gains. A majority of garment manufacturing firms, particularly the export-oriented ones, tend to use imported raw materials originating from Asian countries. While quality is given as the main reason for using imported raw materials, analysts have argued that this limits benefits to the country (Phelps *et al.* 2009; Rolfe and Woodward, 2003). In addition, it is argued that the global sourcing patterns empower global buyers, who invariably source for strategic raw materials to ensure standardization in the fulfilment of their orders. To this extent, manufacturers in Kenya do not have a lot of say in the sourcing of raw materials. Elsewhere, the buyer bestows the responsibility of sourcing raw materials to the head office or the sourcing houses (McCormick *et al.* 2006). Those firms inserted in the US value chains import all fabric from China, India, Hong Kong, Pakistan and Taiwan. There are significant risks of an entire order being rejected should a firm decide to source fabric from sources not pre-qualified by the buyer.

Those manufacturers supplying the EU, domestic and regional markets tend to use raw materials mainly sourced in Kenya. However, these firms are increasingly importing raw materials on account of flexibility and cost consideration. One of our respondent argued that *'the local manufacturers of textile fabrics were very rigid when it comes to colour, and a manufacturer was forced to buy a complete roll of one colour even if they wanted a smaller quantity. Equally, if one finds that a certain fabric was in the production process, he/she has to wait until that process is complete before his or her order is done. This leads to time wastage not to mention that local prices were generally higher than those of imported fabrics'* (Fieldwork, 2006). Therefore, local firms have turned to importing fabric from Tanzania, South Africa and India where they are able to get variety of colours, quantity and quality.

The industry relies heavily on imported machinery, most of which originate from Japan, China and India. Some specialised sewing machines are imported from the UK or the US. Export-oriented firms relied on their head offices for the purchase of machinery, which

are imported from Asian countries. Hardly do these firms buy production machines from Kenya. However, when an EPZ firm, for instance, acquires new machines, it disposes the old one to local garment firms.

Local firms buy most of their machinery directly from suppliers in Kenya and/or from EPZ firms that have closed down. However, a few of them also import specialised machines, mainly from India and China. The use of machine differs depending on the level of technology and the nature of garment products being manufactured (McCormick *et al.* 2007). Although some of the machines are locally available, they are not locally manufactured; instead, they are imported in parts and are only assembled in Kenya. The use of second-hand sewing machines is common among the local garment manufacturing firms. The most common brands of machinery used include Juki and Kansai models imported from Asian manufacturers.

Two types of sourcing patterns can be identified in the Kenyan garment industry. In the first type, firms do not purchase the fabrics and other key raw materials; everything is provided for, either by the buyer or agent, or by the parent company. The only task is to cut-make-trim (CMT). These firms do not undertake any overseas marketing and have no direct link with their customers (Phelps *et al.* 2008). This is common among the large export-oriented firms with high degree of foreign ownership. In the second type, a producer is in charge of procurement of all raw materials and would negotiate the prices with the customer for the entire production. In this case, the producer makes the products and ships them to the customer, popularly known as the free on board (FOB) manufacturing.<sup>25</sup> Responsibilities, risks and profit margins vary according to the activities assumed by the producer.

### **2.6.3 Nature of Employment and Labour Issues**

The textile and apparel industries are vital components of the world economy, providing employment to tens of millions of mostly women workers in nearly 200 countries.

---

<sup>25</sup> Free on board manufacture – this is an international trade term where the seller is held responsible for delivering goods to a certain port, clearing through exports control and loading these onto the ship. Once loaded they become the responsibility of the buyer (Phelps *et al.* 2008:75).

Nordas (2005) estimates that the textile and clothing sectors provided employment for more than 40 million workers worldwide, primarily in developing countries. Together, textile and apparel industries are the largest source of industrial employment in the world – providing jobs to millions. They are labour-intensive sectors that use unskilled labour more intensively than most other manufacturing industries. As entry-level industries for industrializing countries, these industries, with a few exceptions, provide better-paying job opportunities and ensure better working conditions than alternative jobs for women in developing countries. This is particularly the case in the clothing industry among countries in which women's economic activities are otherwise limited to household and farm labour (Brenton and Hoppe, 2007; Nordás, 2005; Dickerson, 1999). Therefore, these industries play a crucial role in employing masses of people who would otherwise have very few other job alternatives, both in developing and developed countries.

Working conditions in the textile and clothing industries differ across countries, depending on the level of economic development (Dickerson, 1999). For example, production activities vary from sophisticated cities in developed world to mud-huts in poor developing countries; from factories in quiet rural communities to refugee camps on the edge of some of the most troubled spots on earth and; from highly trained textile experts to child labourers who toil for long gruelling hours (Dickerson, 1999). Finally, it may range from the production of high-fashion garments in designer salons, to the assembly of clothing in makeshift alley shops in the slums of the poorest, mostly underdevelopment countries. Audet (2007) identifies three major categories of workers in the textile and clothing industries who are affected differentially by shifts in global garment trade policies: primary, secondary and tertiary workers.<sup>26</sup> The restructuring of the global garment industry, following the termination of MFA, is seen to affect primary workers more than secondary and tertiary workers.

Textile industries are often considered to be female dominated; but the actual distribution of male and female workers differs from one country to another, and also from one activity to another. Women account for about 30% of world textile employment, and 74%

---

<sup>26</sup> Workers who produce garments are considered primary workers, while those who produce items like zippers and buttons are considered secondary workers; and those employed by retail stores in the community where the clothing and zipper producers are located are considered tertiary workers.

of clothing employment (ILO, 2000). However, the proportion of male to female workers varies from one region to another (McCormick, *et al.* 2007). In Africa, there is an even higher variation between countries. In Kenya, about 17% of all industrial workers in the textile industry are female, but this changes drastically in the garment production where anecdotal statistics put it at 60%. In clothing production, long established factories favour male workers. Whereas the new EPZ factories favour male workers; they have followed the global trend of hiring mostly young women in their assembly operations.

In Kenya, the textile and clothing industry has made a major contribution to employment creation. Through both direct and indirect employment opportunities, this industry remains the single largest employer within the manufacturing sector, accounting for approximately 19 per cent in 2006. Analysts agree that working conditions notwithstanding, the textile and clothing industry has created much needed employment, particularly for the low-skilled female workers (McCormick *et al.* 2006; Omolo 2006; Kinyanjui *et al.* 2004; Weston *et al.* 2008). Although there is a paucity of accurate data on the level of employment created by all the units within the sub-sector – due to the informal nature and seasonality – anecdotal estimates show that the industry has created 60,000 direct, and over 200,000 indirect jobs in 2006. The sector offers employment opportunities to owners, partners, directors and casual or full-time employees, and both skilled and unskilled workers. It also uses family labour, particularly in the small scale firms. Employment data relating to the EPZs are fairly documented, and reveal that direct employment of Kenyans in all EPZ firms has grown from 1,594 in 1993 to 36,348 in 2003; before declining to 25,766 in 2008 (Omolo 2006, EPZA 2009).

The number of ‘expatriate’ workers in the EPZs has been low compared to local employees (see Table 2.3). One can therefore argue that the garment industry has seemingly generated significant employment opportunities. Although the number of expatriates is low compared to local employees, this seemingly favourable trend is somewhat skewed when it comes to remuneration. For instance, Phelps *et al.* (2008) argue that in some cases the ‘few’ expatriates’ wages are far much higher than that of local employees. In a similar vein, Omolo (2006) has argued that beyond job creation, EPZs have been known to exploit local workers despite ranking in huge profits.

As in many productive activities in Kenya, in the textile industry, labour and gender systems are intertwined. The Kenya Government continues to make a sharp distinction between the 'modern sector' and the 'informal sector' in its documents (McCormick *et al.* 2007:209). By the end of 2007, the 'modern sector' employed 1.9 million persons out of an estimated total labour force of 18 million, of which the manufacturing sector accounted for 13 per cent. Employment in the 'informal sector', although difficult to measure, was estimated at 7.4 million, with manufacturing accounting for about 22 per cent (Kenya Economic Survey, 2009). Even in the so-called modern sector, terms and conditions of service vary considerably (McCormick *et al.* 2007). Many factories have a relatively small proportion of workers employed on permanent terms, with full benefits, while the remainder are considered to be casual labourers. Moreover, the majority of casual labourers are not included in the employment data. This is also the case in the textile and clothing industry and cuts across firm sizes (see Weston *et al.* 2008). While the 'casualisation' of the labour force may have a positive impact on the basic cost structure of clothing products, it has a negative impact in the long run because workers have little or no incentives to excel in situations where promotions are reserved for a small cadre of permanent staff (McCormick *et al.* 2007).

Labour is the most important input in the clothing industry and, historically, the establishment of clothing factories has been influenced by the availability of cheap labour. In Kenya, majority of workers are involved in direct production, although this varies according to the size of operations, the proportion of white-collar jobs tends to be small (Phelps, 2009). In the industry, 'operators' constitute the majority of production workers, followed by 'helpers' and supervisors. Apparently, female workers are clustered in this cadre of production activities.

#### **2.6.4 Ownership Structure in the Kenyan Garment Industry**

In terms of ownership, the industry is highly fragmented with micro and small scale firms being owned by Africans while medium and large scale firms are owned by Kenya Asians. Gender disparity is also evident in terms of ownership, with women owning more

than half of the small-scale garment firms, while men dominate in medium and large scale firms (Kinyanjui *et al.* 2004; Ikiara *et al.* 2002). There is therefore an inverse correlation between firm sizes and female ownership. Similarly, African entrepreneurs tend to be clustered in the micro and small scale firms, while Asians and foreigners own most of the medium and large firms.

There history of Asian involvement in Kenya is long. A Kenyan-Asian merchant class existed prior to the influx of Indian labourers brought in by the British colonial administration to build the Kenya-Uganda railway in the 1890s. However, the railway construction saw increased formation, expansion, and diversification of Kenyan-Indian businesses into the interior market, and in manufacturing industries (Himbara, 1994). Following the enactment of the Trade Licensing Act in 1967, which restricted involvement of Kenyan-Indians in trade activities, they concentrated on manufacturing. It is therefore not surprising that they dominate the textile and clothing industry.

These Kenyan-Asians have maintained relationships with their countries of origin over several generations and, with recent industrialisation of these Asian countries, the relationship has become even stronger, mainly informed by a desire to leverage on new and expanded corporate networks (Phelps *et al.* 2009:318). More recently, the concentration of new Asian investments into the Kenyan clothing industry, courtesy of AGOA's facilitation, reflects some of these long-standing trade and investment interests, as well as the increasing global competitiveness of the Asian clothing industry. Firms in the EPZ and MUB generally maintain close ties with other firms in Asian countries.

### **2.6.5 Market for Garment Products**

The Kenya garment industry attempts to service domestic, regional, and global markets. Existing studies suggests that markets tend to differ in size of enterprise, with micro and small enterprises producing mainly for the domestic market, and larger enterprises mainly focusing on export markets (McCormick *et al.* 2007; Kinyanjui *et al.* 2004; Ikiara *et al.* 2002). However, as stated earlier, this study concentrates on medium and large scale firms.

A wide range of garment products are produced by Kenyan firms. These include t-shirts, polo shirts, sports clothes, baby wears, shorts, suits, shirts woollen knits, track-suits, ladies tops, shirts, trousers, jeans, uniforms, promotion materials and pyjamas (see Table 2.3). These products can be categorised according to the markets they serve.

**Table 2.3: Varieties of Garment Products Manufactured in Kenya**

<b>Domestic</b>	<b>Regional</b>	<b>Global (US &amp; EU)</b>
Promotional clothing	Promotional clothing	Jeans trousers
Uniforms	Uniforms	Ladies tops
Baby wear	Baby wear	T-shirts
Children wear	T-shirts	Polo-shirts
T-shirts	Polo shirts	Sportswear
Polo shirts	Shirts	Track suits
Shirts	Kikoyo	Children wear
Suits	Suits	Shorts
Kikoyo	Trousers (semi casual)	Pyjamas
Trousers (semi casual)		Jackets
Under wear		Kikoyo
Casual wear		Organic cotton apparel
Sportswear		

*Author's Fieldwork, 2006*

The main export market is the US and the EU, which accounted for a combined share of close to 90% of garment exports in 2008. However, some garment enterprises have diversified into other markets such as Canada, Russia, UAE, Hong Kong, and Panama (Kenya Economic Survey, 2009:200). While some firms concentrate on one market, others serve more than one market. Garment manufacturers who supply the US market tend to have operations of a rather different kind to those supplying the EU market. Manufacturers working for the US market tend to operate quite large plants, and produce fairly specialised garments, and almost invariably work on one or another CMT basis for a handful of clients.<sup>27</sup> Most of the firms serving the US market tend to operate under the EPZ or MUB export programmes. By contrast, manufacturers inserted in the value chain leading to the European market are fairly small in size and produce garment on FOB basis. The nature of orders to the European market tends to be smaller than those to the

<sup>27</sup> See Gibbon (2000) for a similar argument in the case of the Mauritian garment industry.

US market, perhaps an indication of the segmentation of the European market largely informed by country and linguistic boundaries.

The garment products into the global markets are standardised and target mass production. Most of the garment products from Kenya into the US market are sold to discount retail stores such as Wal-Mart, Target, Family Dollar, and K-Mart (Phelps *et al.* 2009; Rolfe and Woodward, 2005; McCormick and Schmitz, 2002).

## **2.7 Regulatory and Institutional Framework**

A number of institutions, state agencies and legal structures govern operation and performance of the garment industry in Kenya.

### **2.7.1 Government Ministries**

The institutional framework for the textile and clothing industry in Kenya is placed under three government ministries: Trade, Industrialisation, and Agriculture. The Ministry of Trade develops national policies on issues related to trade, while the Ministry of Industrialisation is in charge of developing industrial policies that guide ginning, textile and clothing production (Kenya, 2008). The Ministry of Agriculture has the responsibility of designing appropriate policies for cotton growing with regard to textile and clothing industry. In line with the overall national development objectives, these three ministries establish policy guidelines that affect the operation of garment manufacturing activities.

### **2.7.2 Public Sector Agencies**

A number of state agencies have a direct impact on the operation of the garment industry. Notable ones include:

- 1) *Kenya Revenue Authority (KRA)* – This institution is in charge of collecting government revenue through taxes. Any exemption of taxes must be approved by

the Commissioner in charge of Customs. From 2006, the government issued a directive that all EPZ firms should pay upfront tax on fuel and other utilities, but then file returns for refund from KRA. This was done to counter the illegal sale of fuel meant for the EPZ firms into the domestic market. Since EPZ and MUB firms are customs-bonded, no goods can enter or leave the factory without the authority of a customs officer.

- 2) *Kenya Investment Authority (KIA)*: This institution registers all firms operating under the Manufacturing Under Bond (MUB). It is a one-stop shop for registration of foreign investments in Kenya, including those in the garment industry, except the ones in EPZ, which are regulated by the Export Processing Zones Authority (EPZA).
- 3) *Export Promotion Council (EPC)*: This institution advises garment producers and other manufacturers in Kenya on new markets and on how to market their products abroad.
- 4) *Kenya Bureau of Standards (KEBS)*: As the only quality assurance body in Kenya, it inspects all garment raw materials being imported in the country to ensure that they meet the specified quality (Kenya, 2008). Similarly, exporters are supposed to liaise with KEBS, which certifies that their products meet international standards prior to exportation
- 5) *National Environmental Management Authority (NEMA)*: This body is charged with the responsibility of ensuring that all factories adhere to environmental standards as set out by the government. Therefore, each factory is expected to obtain a certificate from NEMA to show that it's compliant with environmental standards.

## **2.7.2 Private Sector Agencies**

Private sector institutions that regulate the operation of the garment industry include:

- 1) *Kenya Association of Manufacturers (KAM)*: This is an umbrella body of all manufacturers in Kenya, which is recognised by the government. It provides an avenue through which manufacturers, including garment producers, can engage government in dialogue. KAM has also been given the mandate by the

government to issue AGOA visas for all manufacturers wishing to access the US market under AGOA trade preference. Within the KAM, there is another association of manufacturers and exporters of apparel called the Kenya Apparels Manufacturers and Exporters Association (KAMEA). This body concerns itself with issues of apparel; and it is a channel through which garment producers voice their concerns to the highest government levels (Kenya, 2008).

- 2) *Kenya Private Sector Alliance (KEPSA)*: This is an association of private sector institutions conceived on the basis of promoting public-private sector partnerships. It provides members in the private sector with an opportunity to engage in dialogue with the government.

## 2.7.2 Legal Structures

Although there are many laws that touch on production and trade activities in Kenya, this section highlights only a few of them, especially those that directly affect the garment industry. All the public sector agencies were established through Acts of Parliament. This section focuses on the Factory Act (1972) and the Employment Act (1980), which have been used selectively by garment firms. For example, as earlier stated, the EPZ firms are exempted from the Factory Act and, until 2003, trade unions were not legally allowed in the EPZ factories in Kenya.

- 1) *Factory Act (1972) CAP 514 Laws of Kenya*: This Act was first drafted in 1962 and contains 84 articles dealing with different aspects of a factory set up. It defines a factory as any place where two or more people do the work of converting inputs into outputs in an employment set up. The Act requires all factories to be registered by a chief inspector, who maintains a register of all factories. This is done before any activity in the factory commences. The Act further stipulates the working conditions and the safety measures that should be observed. It also stipulates the responsibilities of workers as well as that of the owners of the factories. It finally provides for redress when some of these minimum working conditions are not fulfilled.
- 2) *Regulation of Wages and Conditions of Employment Act (1980, 2007) CAP 229 Laws of Kenya*: This Act stipulates what employment constitutes in terms of

contracts between one party (employer) and another (employee). It defines what constitutes remuneration and how this should be determined by the Wages Council in the Ministry of Labour. The Act provides responsibilities of each of the parties in the employment contract. It defines working hours and payment for overtime as well as sick leave, maternity leave and annual leave for employees. It also addresses the issue of casual labourers in terms of the time and duration one can be held as a casual labourer in a perceived employment. In total, this Act has 26 articles dealing with different aspects of employment.

## **2.8 Conclusion**

This chapter has examined how global, regional and national institutions have shaped the evolution of the garment industry in Kenya. At the global level, the interest of major importing and developed countries has shaped trade rules in the textile and clothing industry, which operated outside the GATT rules. Efforts by developing countries to have the global garment trade conducted within GATT rules were resisted by the developed countries. It is not until the year 2005 that rules governing trade in textile and clothing reverted to the WTO/GATT. The impact of full liberalisation of the garment industry are yet to be felt due to the safeguard measures that the developed world (the US and the EU) negotiated on the accession of China into the WTO.

Bilateral trade agreements between developed and developing countries play an important role in facilitating market access for clothing products. Notably, AGOA has created a new momentum for the Kenya garment industry, particularly because of the derogation of the third country fabric, at least up to 2012. In order for Kenya to continue accessing this market beyond 2012, there is need to develop the backward linkages with local textile and cotton production, where a serious gap exists in spinning and weaving (see McCormick *et al.* 2007). In addition, strategic alliances with countries in the region need to be strengthened within COMESA and EAC to promote regional collaboration in the clothing production chain.

This study has also examined the current structure of garment industry, demonstrating the prevailing export- and domestic-oriented operations, and how fragmentation impedes

collaboration. The chapter has also demonstrated the regulatory and institutional framework surrounding garment production in Kenya. Having examined this background, the next chapter presents both theoretical and empirical literature to help in understanding the issues that govern global value chains as well as those that deal with technical efficiency.

## **CHAPTER 3**

### **THEORETICAL AND EMPIRICAL LITERATURE REVIEW**

#### **3.1 Introduction**

Our goal in this chapter was to provide critical insights on value chain governance, upgrading, and technical efficiency within the context of garment industry in Kenya. Generally, literature review involves a systematic identification and critical analysis of the relevant theories and studies containing information related to the research problem being investigated, in this case, upgrading and technical efficiency of the garment manufacturing firms (see Mugenda and Mugenda, 1999; Creswell, 2003; Frankfort-Nachmias and Nachmias, 2004). By literature review, we were able to determine what had already been done in this discourse and identified research gaps that our study hoped to fill.

This chapter is divided into two parts. Part one examines theoretical issues: global value chain analysis and technical efficiency theory. Additional theories namely, theory of the firm, new institutional economics and business systems are reviewed in order to provide their linkage between the first two major ones. In part two, we draw on empirical evidence that informs research questions of our study.

#### **PART 1: THEORETICAL LITERATURE REVIEW**

Theoretical basis of this study is drawn from Global Value Chain (GVC) and technical efficiency theories. The GVC analysis helps us to understand how production and trade are organised in a globalised world, while technical efficiency theories enhances our understanding of how firms can acquire capabilities to convert inputs into output.

## 3.2 Global Value Chain Analysis

### 3.2.1 Conceptualising a Value Chains

The notion of production involving a 'chain' of activities ranging from conceptualising the product to bringing it to the market is not new in industrial thinking. Businesses speak of 'supply chains' while the activities of global players have been variously described as international production networks, global commodity chains and *filières* (Gereffi *et al.* 2001 and McCormick, 2007). The commodity chain concept was first developed by Hopkins and Wallerstein (1986) who, drawing from world systems theory highlighted the power of the state in shaping global production systems; exercised in large part in the form of tariffs and local content rules at the point where goods crossed borders.

In this contextualisation, commodity chain was defined '*as a network of labour and production processes whose end result was a finished product*' (Hopkins and Wallerstein 1994: 17). Firms were seen as either producers of inputs for others or users of output from others (Hopkins and Wallerstein, 1986). These basic structures, it was argued, persist through historical cycles of economic expansion and contraction, such that during periods of expansion, chains become extended and vertically integrated while during periods of contraction, chains become disintegrated (Hopkins and Wallerstein, 1994).

Gereffi (1994) revived the GCC concept by refocusing it 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.<sup>28</sup> It is argued trade openness could not in itself create industrial capabilities; rather, it only enabled the growth of international trade (Sturgeon, 2007). Therefore, GCC as developed by Gereffi and others within the political economy of the development perspective, is derived from the world systems theory, itself an elaboration of the dependency theory (Raikes *et al.* 2000 and Gibbon and Ponte 2005).

In this perspective, contemporary industrialisation is perceived as resulting from an integrated system of global trade and production.

---

<sup>28</sup> While the notion of commodity chains was introduced in literature by Hopkins and Wallerstein (1977, 1986, 1994), global commodity chains (GCC) paradigm can be traced to a collection edited by Gereffi and Korzeniewicz (1994).

Since its inception in mid-1990s, GCC has been applied widely by researchers keen in advancing knowledge about how trade for various products is organised (Schmitz 2004 and Gibbon and Ponte 2005). The central proposition of these studies has been to examine patterns of trade between producers mostly located in developing countries and buyers in the developed world. The GCC analysis underscores the need to look both at the geographical spread of transnational production arrangements, and the linkages between various economic agents in order to understand their sources of both stability and change.

Moreover, GCC focuses on the emergence of global manufacturing system in which economic integration goes beyond international trade in raw materials and final products, to encompass centrally-coordinated but internationally-dispersed production of many of the activities along the chains of given commodities or manufactured products (Gereffi *et al.* 1994; Gibbon and Ponte 2005 and Raikes *et al.* 2001). It provides a radically different view on international trade from that is presented in the economic trade theory because its focus is on an integrated system; as opposed to being an isolated phenomenon in the trade theory.

The approach also views trade as being embedded in a particular institutional structure with key agents setting the rules of the game, while economic trade theory generally explains trade as a result of endowment, technology tastes, etc at an abstract level (Raikes *et al.* 2000 and Schmitz, 2006). Raikes *et al.* 2000: 4) provide a comprehensive discussion of the relationship between the GCC (1990s) and the French tradition *filières* of the 1960s and conclude that with the exception to emphasis and language, the two are closely related as they address the issue of chain analysis.

The GCC started to attract wide attention in the mid-1990s; and as a framework has been extensively applied in a variety of case studies but mainly in the manufacturing (see Gereffi *et al.* 2001, McCormick and Schmitz 2002, Gibbon and Ponte 2005).

In the recent years, the GCC literature evolution led scholars to abandon the term *commodity chain* and instead adopt *value chain* which was thought to better capture a

wider variety of products, some of which lack commodity features. As a result, most of the scholars in this discourse currently talk of the *global value chain* which is seen as most inclusive and most useful.

'The concept of value according to Porter (1996) has emphasized the interconnectedness and sequential nature of an economic activity in which each links adds value in the process' (Gibbon and Ponte, 2005:77). In this connection, the global value concept chain refers to the configuration of coordinated activities that are divided among firms that have a global geographical scale. It highlights not only the activities themselves and their interlinkages but also the value addition that is created in each stage.

In this study, we draw from Gereffi (1994), Gibbon (2001), McCormick and Schmitz (2002) and Kaplinsky and Morris (2002) to define a value chain as 'a network of production, distribution and marketing activities required to bring a product from its conception to the final consumption.' By extension, GVC is a sequence of value-adding activities leading to and supporting end use.<sup>29</sup> By use of value chains, we recognise that design, production and marketing of many products – such as garments- now involves a chain of activities divided among enterprises often located in different places. The value chain literature stresses the fact that each activity in a chain adds value to the final product.

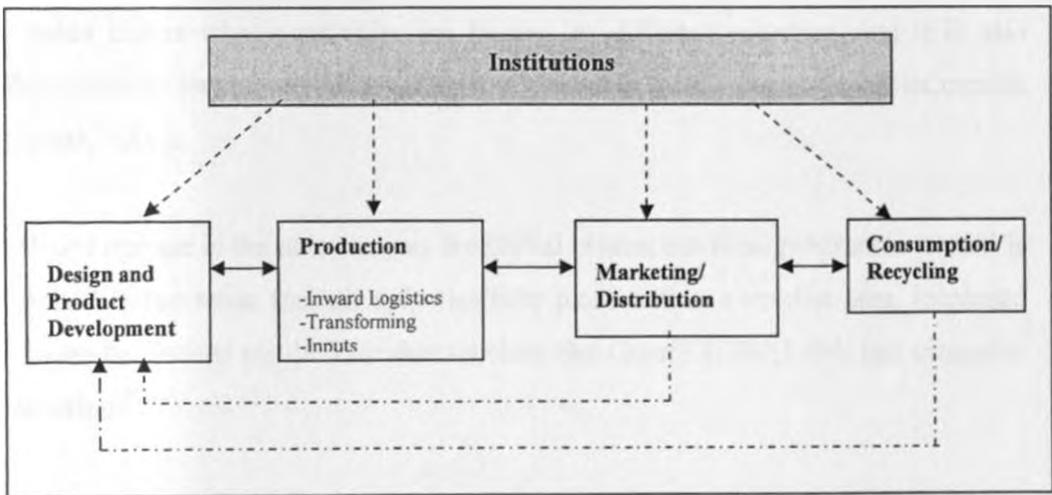
### **3.2.2 Dimensions of Value Chains**

Value chains are often diagrammed to show the flow of goods and or information from the initial design to the final consumer (Figure 3.1). In this model, value chain shows the process of creating value and pinpoints that creation of value is not by production alone. A product is brought to the market through a combination of activities in which production is just but one of the value adding links (Gereffi, 2004; Gereffi, *et al.* 1994; Kaplinsky and Morris, 2007). As discussed later in section (3.3.2), the institutional structure influence how economic agents within the chain interact; hence it is embedded in the chain structure.

---

<sup>29</sup> For more details, see Gibbon and Ponte (2005), Kaplinsky and Morris (2002), Gereffi (1999)

For instance, it is clear that global-scale regulations, the “rule of the game” as it were, have a profound effect on the shape and direction of change in global value chains (Gereffi *et al.* 2005). Value chains in the real world are more complex as presented in Figure (3.1), because a product is brought to the market through activities of many actors, some of which may not be captured in this flow. As elaborated by McCormick and Schmitz (2002:19) “at each stage in the flow, services such as transport or finance may be needed to keep the process going”. In the original configuration of GCC, Gereffi (1994:97) identifies four dimensions: the input-output structure, geographical spread, governance and institutional framework.



**Figure 3.1: Four Links in a Basic Value Chain**  
 Source: Adapted from Kaplinsky and Morris, 2007

**Input-output Structures:** The input-output structure depicts the flow of value-adding economic activities to come up with a product. In this structure, we can think of a product as first being designed, then raw materials are purchased, and production takes place; the product is then distributed to final consumers through wholesale and retail outlets. At each of these five stages, services such as transport or finance may be needed to keep the process going (McCormick and Schmitz, 2002:18). The flow of knowledge is equally essential for the functioning of input-output structure and in most cases parallels the material flows (Humphrey and Schmitz, 2000). Some sections of the structure may require more knowledge than others for the same product.

**Geographical Spread:** The second dimension of a value chain has to do with its *geographical spread*. Some chains are truly global, with activities taking place in many countries located in different continents. Others are more limited, involving only a few locations in different parts of the world. A US retailer may, for example, contract with a Chinese fabric supplier to deliver cloth to a garment producer in Kenya, who undertakes the assembly; the finished goods are then shipped directly to the US retailer, who distributes them in to different parts of the US.

In the case of a HP Printer, it is made in the US, while its colour and black cartridges are made in Ireland and Singapore, respectively. More interestingly, the printer though a US brand, probably designed in the US, was made in Malaysia. These are clear examples of a global value chains whose activities are located in different countries; but it is also possible to identify less talked about national, regional, or local value chains (McCormick and Schmitz, 2002).

These chains operate in the same way as the global chains, but their geographic 'reach' is more limited in the sense that all activities take place within a smaller area. Increased globalisation has indeed resulted in what scholars like Gereffi (1999,1994) call triangular manufacturing.<sup>30</sup>

**Governance:** The third dimension in the value chain analysis is governance or control that different actors exert over the activities making up the chain (McCormick and Schmitz, 2002; Gereffi, 1999). In fact, Gereffi's main contribution in GCC is associated with the development of this important notion that distinguishes the conceptualisation of GCC from other models such as supply chain or filières. The inclusion of power in economic relations and transactions, and the willingness to include aspects of power

---

<sup>30</sup> According to Gereffi (1999) 'This concept involves say a US buyer such as NIKE placing an order for sports shoes with a Taiwanese firm. Then the Taiwanese firm shifts this order to a low wage country such as Vietnam. After the production, goods are then shipped directly to the buyer to complete the triangle is completed'.

excluded from other analyses of international production and trade is seen as one of the strong points of GCC approach.<sup>31</sup>

Governance structure consists of the authority and power relationships that determine how financial, material, and human resources are allocated and flow within the chain (Gereffi 1994:215). Actors in a value chain directly control their own activities and are directly or indirectly controlled by other actors. Since value chains are constellations of human interaction, the variety of governance are endless. The powerful actors in a chain are often called the 'lead firms' who seek to govern the chain (Schmitz, 2006). Chain governance therefore means that lead firms set and/or enforce terms under which the others in the chain operate. It also helps one conceptualise the relationships between lead actors and local producers (Gibbon and Ponte, 2005).

***Institutional Framework:*** A fourth dimension of the value chain has to do with the institutional framework and identifies how local, national and international conditions and policies shape the globalisation process at each stage in the chain (Raikes *et al.* 2000; Gibbon, 2001; Schmitz and Knorringa, 2000). Introduced by Gereffi (1999, 2004) institutional framework surrounding the chain was meant to delineate the conditions under which lead firms subordinate agents through their control of market access and information, both technology and regarding markets.

"It is used to discuss how subordinate participation in a global value chain could provide indirect access to markets at lower costs than individual small-scale producers would otherwise face, and how technological information and 'learning by doing' allow producers to move up the chain hierarchy in form of upgrading" (Raikes et al., 2000:4). Seemingly, it is the acceptance of terms defined by key agents that determine participation in a GVC and also enables a subordinate to upgrade. Sturgeon (2007) further argues that firms and industries clearly adapts in response to institutional pressures ... setting the rules that firms must operate within. The rules set by institutions are derived to a greater extent by the beliefs, values meanings, and priorities embedded in

---

<sup>31</sup> One important aspect is that power is seen not simply as the effect of barriers to entry, but also of organisation changes and of more effective 'supply-chain management' implemented by key agents. Power is not given any formal definition because pf attempts to do so all too easily lead to a regress to ever finer but less usable formulations (Hopkins and Wallerstein, 1994:44).

the societies that create them, fund them, and staff them. At the global level, institutions impacts on the geography and character of GVCs (Bair and Gereffi, 2001). At the firm level Sturgeon (2007) posits that interaction between suppliers and lead firms can be deeply rooted in domestic and even local institutions and culture, and often structure (enable or limit) firm-level GVC governance in an ongoing manner.

If the ultimate goal of firms located in developing countries is to upgrade, what then constraints or promotes this process is the governance structure in each of the value chain. In discussing upgrading, Schmitz and Knorrinda (2000) argue that it is not whether buyers help producers to upgrade, the issue is under what circumstances they might or might not provide the support.

### **3.2.3 Governance Structure in Value Chains**

The concept of 'governance' is central in GVC analysis in defining the nature of relationships among the various actors involved in the chain, stressing the role that lead actors may play in supporting LDC producers. At any point in the chain, some degree of governance is required in order take decisions not only on "what" or "how" a good/service should be produced, but also sometimes, "when", "how much" and even "at what price" (Morrison, *et al.* 2008:40). Since activities in a chain aggregate different value at each stage, governance implies deciding who in the chain performs the better remunerated activities as well as the less lucrative ones. It refers to the authority and powers that different actors command, and also the pattern of direct and indirect control of activities within the chain. "Governance goes beyond merely organising activities: it is ultimately linked with upgrading and the distribution of gains along the chain" (Bazan and Navas-Alemán, 2004:110). Looking at governance in a value chain is of great importance since they way in which producers are inserted into value chains not only affects the margins at which they can sell, but also their possibility of upgrading (Kaplinsky 2002, Bini 2004).

According to Gereffi *et al* (1994:6), 'governance structures constitute the organisational basis of participation in world trade and possibilities of firms to improve their position

within it'. Value chains are linked together by actors operating in a coordinated manner to form the value chain structure (Gereffi and Korzeniewicz, 1994; Gereffi and Memedovic, 2003). The nodes at each stage of the value chain demonstrate contribution by these different actors. By explicitly focusing on the coordination of globally dispersed, but linked, production systems Gereffi (1994) has shown that many chains are characterised by the dominant or lead firm who determine the overall character of the chain (see also Humphrey and Schmitz, 2004, 2001; Navas-Alemán 2006). At the centre of GVC analysis lies the contractual linkage of formally independent firms, whether as a result of out-sourcing of previously integrated components of TNC activities or through the contractual subordination of suppliers previously linked through open market transactions (Raikes *et al.*, 2000; Humphrey 2001, 2003). In fact, Gereffi's contribution on governance has enabled important advances to be made in the analytical and normative usage of the value chain concept, particularly because of its focus on the power relations which is imbedded in value chain analysis (Gibbon and Ponte, 2005).

The structure of governance in value chains not only defines the power and control exerted by different actors but also the potential for subordinates to upgrade within the chain (Schmitz 2004; Sturgeon 2007). Although the definition allows for many forms of governance, Gereffi (1994:97) concentrates on only two: producer-driven and buyer-driven commodity chains. Recent scholarship has taken the notion of chain governance beyond 'producer-driven –buyer driven' dichotomy to include other forms of governance in value chains (see McCormick *et al.*, 2007; McCormick and Schmitz 2002; Sturgeon 2007; Morrison, *et al.*, 2008; Gibbon and Ponte 2005; Humphrey and Schmitz 2004). For example, McCormick and Schmitz (2002) identify four main types of governance: market, balanced network, directed network and hierarchy. Others have used the analogy of civic governance to develop a more complex analysis such as rule making and rule keeping (Kaplinsky and Morris 2002:67); while others have developed new typology based on knowledge complexity, ability to codify information and capabilities (see Gereffi *et al.* 2005; Gibbon and Ponte 2005, Navas-Alemán 2006, Sturgeon 2007).

### 3.2.3.1 Producer-Driven Versus Buyer-Driven Commodity Chains

Producer-driven commodity chains occur in those industries in which TNCs or other large integrated industrial enterprises play the central role in controlling the production system including its backward and forward linkages (Gereffi, 1994: 97). In this type of value chain, manufacturers are the key agents in determining what, how and when production is done. This is most characteristic of capital-and technology-intensive industries like automobiles, computers, aircraft, and electronic machinery (Table 3.1).

Most producer-driven chains are characterised by production to order and where this is not possible because lumpy investments are required, they are dependent on publicly managed demand. Thus, suppliers are often tied together rather than internally competing. They also tend to be located close to the sites of end production. Therefore, the geographical division of labour is less pronounced.

**Table 3.1: Characteristics of Producer-Driven and Buyer-Driven Value Chains**

	<b>Producer-Driven</b>	<b>Buyer-Driven</b>
Drivers of Global Value Chains	Industrial Capital	Commercial Capital
Core Competencies	Research and Development; Production	Design and Marketing
Barriers to Entry	Economies of Scale	Economies of Scope
Economic Sectors	Consumer Durables, Intermediate goods, capital goods	Consumer nondurable goods
Typical Industries	Automobiles, Computers, Aircraft	Apparel, Footwear, Toys
Ownership of Manufacturing Firms	Transnational Firms	Local Firms Predominantly in Developing Countries
Main Network Links	Investment Based	Trade Based
Predominant Network Structure	Vertical	Horizontal

*Source: Gereffi (1999)*

‘The geographical spread of these industries is transnational, but the number of countries in the commodity chain and their levels of development are varied. International subcontracting of components is common, especially for the most labour intensive production processes, as are strategic alliances between international rivals. Nonetheless, production system is highly controlled by the administrative headquarter of the TNC’

(Gereffi, 1994; Gibbon and Ponte, 2005). Producer-driven chains are increasingly structured so that low-profit activities are outsourced upstream to networks of suppliers, bound by a contract to produce according to tightly specified conditions. The automobile industry is a classic illustration of producer-driven commodity chain whereby multinational firms such as Toyota and Ford organised and controlled the production of vehicles bearing their brand names (McCormick, 2007).

Buyer-driven value chains on the other hand refer to chains that generally have low barriers to entry in production. They characterise those industries in which large retailers, marketers and branded manufacturers play the pivotal role in setting up decentralised production networks in a variety of exporting countries, typically located in the third world (Table 3.2). This pattern has become common in labour-intensive, consumer goods industries such as garment, footwear, toys and consumer electronics (McCormick, 2007; Bazan and Navas-Alemán, 2004; Gibbon 2000; Dolan and Tewari, 2001). Production is generally outsourced to a competitive decentralised system of sub-contractors, the majority typically located in developing countries, often ranged in a multistage but also multi-quality array, with the bottom technology, quality and value-added located in the least developed countries with the lowest wages (Raikes, *et al.*, 2000:7). The buyers provide design and specifications of what is to be produced to the subordinate producers.

In this type of value chain, buyers who are the key agents control design and marketing, where barriers to entry are high and profits are concentrated. New brand-name - 'producers without factories,' such as Nike, Liz Claiborne, and the Gap are organised entirely on this basis. They design but do not manufacture the products that carry their labels. These retailers derive power within the chain because of their proximity to consumer markets and they exercise this power through coordinating production networks (Gereffi *et al.* 2005; Gereffi, 1999).

The producer and buyer driven nature of value chain has raised numerous fundamental questions in the GVC discourse. Raikes, *et al.* (2000:7) discounts the notion of exclusiveness of producer- and buyer-driven, by arguing that it might be possible to find more than one driver (key agent) in a single chain. The second fundamental question is

whether all lead actors in say, buyer-driven chains have the same significance in terms of governance structure of the chain (Gibbon and Ponte, 2005:80). The third issue is whether there could be a tendency for powerful or key agents to shift downstream over time.

A fourth issue relates to the extent to which the location of control in producer driven GCCs is as a result of control of advanced technology, rather than market access deriving from control over an internationally known brand name. A final issue is whether this kind of value framework can be applicable to other products such as agricultural products. In this connection, the application of 'Fordist'<sup>32</sup> analogy in agricultural products could be inappropriate given that there are macroeconomic differences between manufacturing and agricultural products. Although there are no outright answers to these pertinent issues raised by Raikes *et al.* (2000), the application of governance issues has continued to receive scholarly attention among researchers.

### **3.2.3.2 Beyond Producer-Driven and Buyer-Driven Governance**

As stated earlier, Humphrey and Schmitz (2000) and McCormick and Schmitz (2002) identify four main types of governance: market, balanced-network, directed-network and hierarchy. When the market governs a chain, most transactions take place between buyers and sellers dealing at '*arms-length*'. Implicitly, this form of chain does not have any type of governance and transactions between actors in the chain occur through market-type relationships.

A typical example is men's cotton athletic socks where there is no need for buyers and suppliers to collaborate on product definition because the item is standard (Humphrey and Schmitz, 2000; McCormick and Schmitz, 2002; Bini, 2004; Gereffi *et al.* 2004; Navas-Alemán, 2006; Kaplinsky and Morris, 2007). In a network structure, cooperation is sought between actors who are equal in complementary competencies and no actor

---

<sup>32</sup> Fordism is a terminology used to describe a 1909 innovation in automobile industry (Ford) to convert production to a highly systematized operation that emphasized on continuity and speed. The strategy was to maximize output of a basic, standard and largely unchanging product (Model T) at the lowest possible price (Hopkins and Wallerstein, 1994).

dominates the chain. In a case where buyers and producers collaborate and combine their different skills to come up with a product, for instance an '*eco-friendly*' knitted garment, it is said to be a balanced network (Humphrey and Schmitz, 2000; Bair and Gereffi, 2001; McCormick and Schmitz, 2002).

Otherwise, when one firm in the chain takes the lead to direct other 'independent' firms, this becomes a 'directed-network' or 'quasi-hierarchy' (Gibbon, 2001). In this case, the lead firm may specify what is to be produced by whom and it may monitor the performance of the producing firms (Schmitz, 2004; McCormick, 2001; McCormick and Schmitz, 2002). Finally, in the hierarchy there is a direct ownership of subordinate by the lead firm or at least some of the operations of the latter. This constitutes a vertically integrated enterprise that controls a number of different stages of production along a value chain (McCormick and Schmitz, 2002). For example, if a firm owns textile, garment production and retailing operations, then it is said to be vertically integrated (World Bank, 2007; Adhikari and Weeratunge, 2007). Some value chains are characterised by vertically integrated firms which control chain activities through their own decision making hierarchy.

A new discourse in defining governance has been extended by Gereffi, Humphrey and Sturgeon (2005) in which extends the two middle structures of McCormick and Schmitz (2002) and Humphrey and Schmitz (2000), namely balanced- and directed-networks to come up with three structures according to the complexity of transactions, the ability to codify transaction, and the capabilities of the supply base.

Obviously, this is an extension beyond the original buyer- and producer- driven dichotomy, which yields a total of eight combinations depending on whether independent variables take a value of high or low as shown in Table 2.2 (see Sturgeon, 2007). Three of these outcomes are ruled out because in practice they are inherently improbable (Gibbon and Ponte, 2005:80). Starting from the one closer to the 'market' end of the spectrum and moving towards the 'hierarchy' end the three new 'middle' categories are: a) *modular value chains*, where suppliers prepare products to buyer's specifications in a 'turn-key' fashion; b) *Relational value chains*, with complex interactions and high levels

of asset specificity mediated by reputation, family or ethnic ties over long periods of time; c) *Captive value chains*, basically identical to McCormick and Schmitz's quasi-hierarchy category (Navas-Aleman, 2006; Schmitz, 2006). Therefore, according to this new typology, governance in value chain is conceptualized as to include: *Market*, *Modular relationship*, *Relational interactions*, *Captive relations*, and *Hierarchical relations* (Sturgeon, 2007:8).

**Table 3.2: Key Determinants of Global Value Chain Governance**

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	<div style="text-align: center;">           Low            ↑            ↓            High         </div>
Modular	High	High	High	
Relational	High	Low	High	
Captive	High	High	Low	
Hierarchy	High	Low	Low	

Source: Adapted from Gereffi, et al. (2005)

The advantage of this new classification lies in its recognition of the nuances and trajectories that characterize the dynamic nature of value chains, where power relations and capabilities are not static (Navas-Aleman, 2006). Moreover, this framework is able to highlight issues related to the complexity of transactional information and the importance of their codification where hands-off relations existence of hands-off relations.<sup>33</sup>

Notwithstanding these advantages, this framework has been criticized for its limited power to determine the overall form of governance, particularly when a value chain is characterised by different forms of coordination in different segments of the same chain (see, Gibbon and Ponte, 2005). Even in the case of hands-off relations, it fails to distinguish between immediate forms of coordination and overall forms governance. Finally, the framework retains blindness of external regulative conditions that presented a

<sup>33</sup> According to Gereffi et al., 2005; Gibbon and Ponte, 2005 and Sturgeon 2007, lead firms devise forms of hands-off governance that are exercised on the basis of setting of precise standards, modularization of the production specifications, and/or codification of suppliers' knowledge which are then left to first tier suppliers to implement further upstream.

central weakness of the original buyer- and producer driven chains. For these reasons and given that the core of our study is to compare upgrading potential in various garment value chains, we limit ourselves to simple governance classifications as defined in Humphrey and Schmitz (2000) and expanded by McCormick and Schmitz (2002). In the next section, we turn to the concept of upgrading as used by different scholars, in order to anchor it in our study.

### **3.2.4 Upgrading in Value Chains**

The concept of upgrading has its origin in international trade theory where it is used to indicate a shift towards a specialisation in higher value-added goods within the same sector in studies on dynamics of countries' specialization (Morrison, *et al.*, 2008:45). This concept has gained scholarly attention in value chain literature because of its implication in shifting from low to high return activities within the chain. 'Upgrading involves changes in the nature and mix of activities, both within each link in the chain, and in the distribution of intra-chain activities, whose aim is to replace basic low-paid activities with activities that command higher returns' (Kiggundu 2007:158, McCormick 2007:30; Kaplinsky and Morris, 2002:38).

One of the main problems facing producers located in developing countries is their physical distance and 'disconnectedness' from international markets. There is gap between requirement for international markets and those of developing countries which can be filled by producers in developing countries updating their information on international markets (Bini, 2004: 351). They may also need to reach an acceptable level of speed, quality, and reliability in their particular activity which is achieved through upgrading. Gereffi (1999) emphasizes the possibility for local producers to embark on learning and knowledge acquisition from external buyers when they are inserted in global value chains. In this context, access to leading firms is seen as key for industrial upgrading as it place firms on a dynamic learning curve.

Generally speaking, upgrading occupies a central place in the value chain discourse where it is used to highlight the possibilities of producers (mostly in developing

countries) to move up in the value chain, either by shifting to more rewarding functional positions or by making products that have more value added invested in them and that can provide better returns to producers.<sup>34</sup>

It is about acquiring capabilities and accessing new market segments by participating in particular chains. It is stimulated through learning from lead actors rather than interactions between firms in the same functional position or within frameworks of common business systems or national innovation systems (Gibbon and Ponte; 2005). Recent contributions argue that upgrading needs investments and effort at the firm level (Kishimoto, 2004; Schmitz and Knorrninga, 2000). Schmitz (2004:356) 'stressed that upgrading requires continuous investment by local firms in people, organisations and equipments'.

Kaplinsky (1998) asserts that *'upgrading encompasses any change that yields higher returns, in a way of trying to outwit rivals using differentiation strategy (doing things differently or doing other things that rivals are not doing) rather than just improving 'operational effectiveness in activities similar to those that rivals may be undertaking'. It is the only way for a producer to capture any extraordinary incomes (or rents) arising from upgrading efforts'*.

The work by Humphrey and Schmitz (2000) provides a conceptual framework for understanding upgrading in buyer-driven chains. They define 'governance' as coordination of economic activities through non-market relationships or the pattern of direct and indirect control over a value chain. They then make a distinction between the different types upgrading and argue that some of forms of governance favour some types of upgrading and not others. Based on this work, the subsequent literature on value chains essentially identifies four trajectories in which firms can adopt in pursuing the upgrading objective<sup>35</sup>, namely:

---

<sup>34</sup> See also Gibbon and Ponte (2005), Humphrey and Schmitz (2004) and Navas-Alemán (2006)

<sup>35</sup> For details see McCormick and Schmitz (2002), Gibbon (2001), Kaplinsky and Morris (2002), Memedovic (2004), Humphrey and Schmitz, (2001), Bair and Gereffi (2001).

- 1) *Process Upgrading*: This is concerned with improvements in the production systems or improving the efficiency of internal processes, such that they are significantly better than those of rivals (Kaplinsky and Readman, 2000; Schmitz, 2006). It is achieving a more efficient transformation of inputs into outputs through the reorganization of productive activities. It involves the acquisition of new machinery, implementation of quality control programmes, shortening of delivery times and waste reduction.
  
- 2) *Product Upgrading*: This deals with introducing new products, changing designs, improving quality and producing a more sophisticated final output. It may also involve changing the product development processes as well as improving old products faster than rivals.
  
- 3) *Functional Upgrading*: This involves increasing value added by changing the mix of activities conducted within the firm, or moving from low activities to high return activities. It is about acquiring new functions in the chain or abandoning existing functions to increase the overall skill content of activities (Schmitz, 2005:13). The functional upgrading route frequently discussed in the literature is a transition from assembly to original equipment manufacture (OEM), to own design manufacture (ODM) and finally to own brand manufacture (OBM) (see Gereffi, 1999:40, Gereffi and Memedovic, 2003:1).
  
- 4) *Chain Upgrading (inter-sectoral upgrading)*: Which as the name suggests, entails moving to a new, more profitable chain. For example, Taiwanese firms moved from the manufacture of transistor radios to calculators, to TVs, to computer monitors, to laptops and now to Wireless Application Protocol (WAP) phones (Schmitz, 2006:555). It involves using the acquired knowledge in particular chain functions to move into different sectors (Sturgeon, 2007).

It has been suggested that the order in which these types of upgrading have been listed also represents the usual upgrading path (McCormick, 2007; Bair and Gereffi, 2001; Kaplinsky and Morris, 2002).

Firms first upgrade their processes in order to become competitive, and then move into product upgrading. The third step is functional upgrading, in which firms that have become competent in simple assembly operations begin to take on additional functions such as design, cutting, logistics finishing and marketing. The final upgrading strategy involves changing chains, which apparently is not closely applicable in the garment industry.

### **3.2.5 Importance of GVC Analysis in Upgrading in Kenya Garment Firms**

Value chain analysis is important. Conceptually, it presents a good picture of the process of creating value and shows that production is not the only way to create value (McCormick and Schmitz, 2002:16). It enhances our understanding of the way trade takes place and how markets are regulated through tariff and non-tariff barriers. It also facilitates the examination of issues of skill acquisition, upgrading and the distribution of goods along the chain. Finally, it facilitates finding leverage points for policy interventions.

These issues are of particular relevance to the global garment industry today, where the dynamics of production and trade have changed dramatically as demonstrated from the previous studies (Brenton and Hoppe 2005; McCormick *et al.* 2006; World Bank 2007; Phelps *et al.* 2008). As discussed in chapter 2, the termination of MFA and the removal of quotas have varied impacts on the industry in developing countries. The imposition of quotas restricted exports from efficient producers and also created market access for the less developed countries. Importing countries were forced to source from exporting countries based on the unfilled quotas.

Works by Lande *et al.* (2005), Audet (2007) Morris (2006), McCormick, (2006) and Adhikari and Weeratunge (2007) demonstrate that restrictions on imports from more competitive East Asian manufacturers such as China, Hong Kong and South Korea led to a displacement of clothing production to less developed but less competitive locations such as Bangladesh, Indonesia, Sri Lanka, Lesotho, Kenya, and Mauritius. As these

changes were taking place, global buyers with no production of their own maintained high controls over design and marketing of products; standard setting and sourcing of raw materials; distributing them globally and importing. Product specifications and risk of supplier failure are given as some of the main reasons why global buyers have to closely monitor the supply chain of their products (Schmitz, 2006).

In the post MFA period where export quotas no longer apply, the economic vulnerability of global business model based on production fragment is exposed. Buyers are consolidating their sourcing behaviour by alienating less efficient producers; non price factors have become more important than before; and global competition has intensified with surges from countries which were initially constrained by quotas (Audet, 2007; World Bank, 2007; Tewari, 2006; Adhikari and Yamamoto, 2008). The use of value chain analysis is paramount in our understanding of how these dynamics are affecting the industry in developing countries and more importantly review options available to sustain this important industry in Kenya.

### **3.3 Other Theories Related to GVC (Firm, Institutions & Business Systems)**

At the centre of value chain analysis is the firm which ideally constitutes an actor. In the process of developing GVC framework we have in addition to discussing about firms, talked about institutions which guide in this interaction. In this section I highlight some of the theories that may help us to conceptualise how actors in the value chain are linked. I briefly discuss the theory of the firm, followed by 'institutional theory' and finally touch on 'business system theory'.

#### **3.3.1 Theory of the Firm**

Firms constitute the basic building blocks in understanding how a value chain is linked as they occupy a key position between production and marketing of products. They also form a link between the market and the state (McCormick and Kimuyu, 2007). Any debate on chain linkages that ignores firm behaviour in discussing how production is

organised might be inappropriate. Within the input-output dimension of a value chain is a firm whereby inputs are converted into output. I do not pretend to have covered this theory in its fullness because it will form another totally different discourse, but I appreciate the role played by firms in shaping value chains.

In neo-classical economics, firm behaviour is influenced by a number of factors, notably prices, market conditions, and government policies. In their quest to maximise profit, firms will respond to imbalances resulting from changes in factor costs or regulations by adjusting their operations in order to restore equilibrium (Varian, 1999). Whenever disturbances occur, neoclassical economics argue that as long as firms have full information, equilibrium will be instantaneously restored.

In such a case, no effort will be required to effect exchanges in these transactions (Coase, 1932). This argument posits the existence of continuous monitoring and control over the firm's profit function by fiddling around with factor inputs, which might amount to oversimplification of firm's behaviour. From this perspective, firm's operations will definitely change once the pricing and the regulatory framework changes (Coase, 1992).

For example, when the price of one of the inputs in the production function increases several things within the firm might also change to account for the increased cost of production (Coase, 1932; Varian, 1999; Kimuyu, 1999). An increase in the cost of raw materials will compel firms to substitute the costly input with those obtained from cheaper sources or reduce on other inputs such as labour. Given that most prices of garment products are given and dictated upon by the buyer, a firm may not be able to transfer increased costs of production to the final consumer.

### **3.3.2 New Institutional Economics**

A key feature of global value chains today is the environment in which they operate. No one will doubt the critical role played by institutions in shaping not only the spread of a chain but also the governance structure. Raikes *et al.* (2000:3), citing Gereffi (1995) assert that in value chain 'institutional framework identifies how local, national, and

international conditions and policies shape the globalisation process at each stage in the chain. It is in line with this thinking that a fourth dimension of value chain 'institutional framework' is introduced in the discourse. However, some scholars subsume institutional framework in the governance structure.

In seeking to demystify the role of institutions in value chains, I draw from the new institutional economics (NIE) which includes economics of information and organisation. The NIE was propounded by North (1990:2) describes 'institutions as humanly devised constraints to that human being devise to shape human interaction. They are the rules of the game in a society. Moreover, North (1990) distinguishes between institutions and Organisations which are defined as rules and players respectively. Pedersen and McCormick (1999), deduce that an institution is a set of constraints that governs the behavioural relations among individual and groups.

This approach recognises that a mixture of institutional arrangements such as mutual collaboration, observance of customs and rules, sometimes force and the enforcement of such rules must compensate for the incompleteness of contracts (Stiglitz 1992; Nkya 1998; Sørensen and Kuada, 2003). The NIE embraces four schools of thought namely: the property rights, transactions cost, the principal-agent framework, and imperfect information (North 1990, Nkya 1998). It may be insufficient to study the exchange process and corresponding firm behaviour without specifying or taking into account the institutional setting in which these firms operate.

Institutional context affects production incentives and its cost. Institutionally,, these are rules governing society either bureaucratically, as codified in legal cannons and regulatory systems, or existing more amorphously, through perhaps no less powerfully, in the realm of societal norms and expectations (Sturgeon, 2007). On the other extreme one can think of institutions as bureaucratic organisations such as multilateral agencies and government agencies.

### 3.3.3 Business Systems Theory

Business systems are particular forms of economic organisations that have become established and reproduced in certain institutional contexts with a view to coordinating and controlling economic activities (Whitley, 1996). The context in which these organisations are formed could range from local, regional, national or global. Underlying the notion of a business system is the recognition that business activities do not happen in a vacuum; rather, they are formed and operated in a specific environment peopled by a wide variety of institutions (Whitley 1992: 27 ff).

These institutions range from economic institutions -markets, firms and contracting; to political and social institutions -such as state, family gender and ethnicity. Business systems form distinctive ways of coordinating and controlling economic activities which are developed interdependently with key institutions and they constitute particular type of political, financial, labour and cultural systems (Whitley, 1992, 1996; Wad, 1997; McCormick and Kimuyu, 2007). Business system theory explains the organisation and functioning of these institutions and their implications for firms' growth (Sørensen and Kuada, 2001).

Drawing from the NIE, the business systems approach includes formal rules such as: constitutions, policies, laws, and regulations and the less formal norms, customs, and code of conducts.

It differs with NIE by moving ahead of mainstream economic approaches to include an analysis of the existence and influence of productive enterprises such as economic actors in market economies. Whitley (1994:153) posits that:

*"Taking firms seriously as economic actors implies that their boundaries, constitution and development become significant foci of analysis and that the conditions under which particular kinds of firms become established, interact and change require systematic consideration. Rather than reducing them to epiphenomena of market processes or class conflicts, firms need to be conceptualised as interdependent, semi-autonomous, economic agents which are able to control and direct resources by virtue of delegated property rights in ways which make a difference to economic and social outcome."*

Although Whitley (1992) perceives business systems as confined within state boundaries, other scholars demonstrate that there are international business systems which are unique and have an influence on national systems (Pedersen and McCormick, 1999; Sørensen and Kuada, 2001; Rademakers, 1997; Holmstrom, 2001).<sup>36</sup> Research in Asia and Europe, suggests that particular groups of institutions are likely to be more important than others in determining the nature of a national business system. Institutions are then grouped into three main categories: firms, markets and societies (Whitley, 1992).

Firm-level institutions include management styles and structures, decision making structures, employee/employer relations, pattern of company growth and development. Market institutions include customer, supplier and inter-firm relations, the role of financial sectors and the state in market and industry development. In the context of developing countries, the international dimension of business systems has often impacted considerably if not being decisive for the formation of core institutions and business activities. Hence, developing countries should have truncated sub-business systems linked to Northern business systems and several peripheral systems co-existing in the same country or sector (Sørensen and Kuada, 2001; Rademakers, 1997).

Unfortunately, international context of business systems seems less constitutive for distinct business systems than their national context because of lack of dominant international institutions, and even where they exist, are generated and driven by dominant nations and their business systems. In the case of a small open economy like Kenya, external institutions can have significant impact on the national business system.

Whitley (1994) advances two sets of institutions in order to explain business systems: (1) *Background institutions* which include trust between non-kin; loyalty to non-family collectiveness; importance of individualism; depersonalisation and formalisation of authority relations; differentiation of authority roles; reciprocity, distance and scope of authority; and (2) *Proximate institutions* which include business autonomy or dependence on strong, cohesive state; state economic policy; financial system; education and training system; strength of trade unions; and private or public system of skill certification. The

---

<sup>36</sup> See Rademakers (1997:2-5) for details about the national (state) business systems.

interaction between these two types of institutions then determines how firms, market and societies work. In our case, we apply tenets of business systems to underscore how institutional frameworks in value chains form into business systems.

In support of our argument to apply institutional theories in our analysis, Gereffi, Humphrey and Sturgeon (2005:101) propose that “it is also clear that global-scale regulations, the “rules of the game” as it were, have a profound effect on the shape and direction of change in global value chains. In a wide range of industries, from electronics to apparel to household goods, selective exemptions for duties on value added in particular locations, such as section 807 and most-favoured-nation status for United States and outward processing arrangements for Europe have encouraged the geographical fragmentation of global value chains as we have seen in the apparel case...”

According to Pedersen and McCormick (1999), African history and the institutional environment seem to have combined to produce business systems that are not unitary but fragmented. The various segmentations of business systems interact with each other, but only in limited ways. This has also meant that state remained the most critical institution for facilitating economic development. The analysis of the business system in Kenya needs not only to follow Whitley (1996) who treats the state as one of a number of market related institutions. Instead, our approach should be to treat the state as a separate institution independent of all the others.

In terms of using business systems, it might be helpful to understand cultural issues relating to manufacturing and demand for garment products in Kenya. There is undoubtedly a long history of Indians' involvement in the manufacturing sector which dates back to the pre-colonial period. Himbara (1993, 1994) demonstrates how Indian sidelined in the main economic sectors at Independence led to their over concentration in the manufacturing sector as a survival strategy. The Trade Act of 1967 somehow restricted Indians involvement in commerce because this was perceived as an impediment to the growth of an indigenous Kenyan business class. As a result of this political move all 'duka-wallas' which had grown especially along the railway line were drastically phased-out. Most important for our discussion here is the reversal of commerce from

Kenyan of Indian origin to the state. Parastatals were drastically created established in almost all sectors including the textile and clothing to undertake commerce activities previously run by Indians.

Another peculiar characteristic of Kenyans is the preference with which garments assembled or manufactured in other countries is high compared to products manufacturing in the country. The mushrooming of exhibitions in major towns a recent phenomenon is in response to Kenyan's preference for imported garments.

Finally, the location of EPZ firms in Nairobi and not Mombasa raises a number of issues. For example, there is no justification as to why EPZ are largely located in Nairobi, yet these firms rely heavily on the Port for entry of goods and shipping finished products to buyers outside Kenya. Although the Act is clear that investor can develop individual zones, it is not explicit why the head office of EPZA was located in Athi River. On the one hand, producers' complaint about the high costs of production linked with transport from Mombasa to Nairobi which on average takes about two months. On the other hand, it is surprising that most of the garment firms which have closed shop in Kenya were located in Mombasa.

### **3.4 Technical Efficiency Theory**

#### **3.4.1 Introduction**

The value chain literature is very strong on global value chains – implicitly supporting the superiority of production for exports. As discussed later, one of the main propositions by Gereffi (1994, 1999) is that upward movements within the chain(s) are likely to be achieved by firms who join it at the lower ends and undergo a process of learning that improves their chances of taking up more sophisticated tasks and upgrading into more profitable chain link. This proposition by Gereffi can be interpreted as a version of 'Learning by Exporting' paradigm with roots in economics. Although the debate on superiority between learning by exporting and at national markets is discussed later in the light of Bazan and Navas-Alemán (2004:125 ff), our intention here is to provide link between GVC and a firm's technical efficiency.

Many studies have stressed the link between firm's efficiency, productivity and its ability to export.<sup>37</sup> It is widely accepted that exporting firms tend to be more efficient and have higher levels of productivity than non-exporting firms. Exporting firms tend to be more dynamic, larger, use scale of economies and generally outperform non-exporting firms (Söderbom, 2004). Broadly speaking, there is consensus between economics and value chain literature about the role of exporting on firm efficiency. Bigsten *et al.* (2004:16) posit that exporting offers maximum scope for the increased competition discipline and contact with foreign customers provides maximum scope for learning opportunities.

Another key to understanding why some countries are successful in exporting certain products lies in the nature of their industrial specialisation. The theory of comparative advantage suggests that there will be inter-industry specialisation and trade between nations with different resource endowments. Recent thinking has led to refinements of this theory.

For instance, it is argued that most countries produce only a subset of products within the set of products within its industry and due to available scale economies, such that product limitations lead to intra-industry specialisation and trade (Krugman, 1981). Various forms of specialisation include product, chain, and end use, such as consumer goods, primary products, intermediate goods, etc. The nature of industrial specialisation may be an important predictor of what products will be made and offered for export.

Once firms in an industry begin to trade internationally, the industry is influenced by the experience of those who participate (McCormick *et al.* 2009). The literature on global value chains suggests that firms learn from their contacts with foreign buyers and suppliers how to become more efficient (Schmitz and Knorrninga, 2000; Kaplinsky and Morris, 2007). Gibbon (2000) found that there are significant differences in the nature of specialisation between firms producing for the EU market and those producing for the US market in Mauritian clothing sector, corroborating the fact that countries can specialise by market destinations.

---

<sup>37</sup> See for example Bigsten, (2004); Tybout (2000); Söderbom (2004) and Söderbom and Teal (2004)

Similarly, Gereffi (1999) and Schmitz (2006) argue that insertion in GVC enables local producers to learn a great deal from global buyers about how to improve their production processes, attain consistency, high quality, and increase the speed of response to customers' orders. Such learning may affect firm behaviour, inducing some firms to continue in exporting and others to pull back or remain in the domestic market (McCormick, *et al.* 2009). A caveat in the learning-by-exporting argument is that it does not specify in what kind of activities within the value chain this high production occurs. In this argument, exports are treated like one single category of products.

The question that GVC attempt to answer relates to where producers are efficient and productive for the best-remunerated activities or lowest paid activities of the chain (Navas-Alemán, 2006). Critically, one can implicitly link “technical efficiency” to “process upgrading” within the GVC – whereby the two concepts have to do with enhancing internal processes in a firm (section 3.2.4). In our case, when a garment firm invests in new machinery or technology (process upgrading), so that it reduces on wastage, this can be equated to technical efficiency. In the global value chains literature, Kaplinsky and Morris (2002:9) observe that with globalisation, efficiency in production is only a necessary condition for successfully penetrating global markets. The success is linked to the governance structure of the chain.

### **3.4.2 Technical Efficiency Components**

In the production theory, a production function is defined as a schedule showing the amount of output that can be produced using a specific set of inputs, given the existing technology. A production frontier or best practice production function is the maximum output which could be obtained from a set of production inputs (Ajibefun and Daramola 2003; Little *et al* 1987; Coelli *et al* 2005, 1998; Chirwa 2001).

In practice, hardly is a firm able to produce along this production frontier, and deviations of output observed from this frontier (the maximum output obtainable) are assumed to be

as a resulting from technical inefficiency.<sup>38</sup> Technical efficiency reflects the inability to maximize the output derived from a given productive activity or services (Battese and Corra 1977; Ngui *et al.* 2007; Greene 1993). It also refers to the actual output ratio to the maximum output technically feasible given inputs.

Technical efficiency theory is rooted in the production theory of microeconomics. The production frontier (production function) is a function,  $Y = f(x)$ , that describes the maximum output ( $Y$ ), a firm can produce using any particular set of inputs  $x$ . Production frontier can be viewed as composed of those parts of the firm's production functions that yield maximum output for a given set of inputs. It may not be possible for a firm with its scale of operation to reach this frontier. Whereas some firms may be closer to the production frontier, others may be quite far below or above (Coelli, 1995).

The production frontier defines the limit to a range of possible observed production (cost) levels and identifies the extent to which the firm lies below or above the frontier. The notion of how close individual firms are to the maximum levels (as defined by the frontier) given the level of input levels is the measure of technical efficiency for each firm.

Technical efficiency (TE) is the firm's ability to achieve maximum output given its set of inputs and its scores vary between zero and one (Aigner *et al.* 1977; Coelli, 2005). A value of 1 indicates full efficiency and operations are on the production function. A value of less than one reflects operations below the frontier (Greene, 1993; Coelli *et al.* 2003). The wedge between one and the value observed measures the technical inefficiency and the closer a firm is to, the higher the level of technical efficiency.<sup>39</sup> Production functions are usually estimated from sample data on a number of firms which may involve cross-sectional, time series or panel data, as long as information on quantity or values of output

---

<sup>38</sup> The difference between the predicted output and the actual output of a given firm is attributed to technical inefficiency in production. The extent of technical efficiency is normally expressed as a Farrell Index as the ratio of actual to predicted output. Firms performing best practice have Farrell indexes of one; those which are technically inefficient have indexes of less than one (Ngui, 2008; Kumbhakar and Lovell, 2000; Coelli *et al.* 1998).

<sup>39</sup> Other measures of efficiency include Technical Change (TC), Scale Efficiency (SE), Input Mix Allocative Efficiency (IMAE), Total Factor Productivity (TPF), and Cost Efficiency (CE). For more details, see Coelli (2003: 11-14).

and input are available.<sup>40</sup> Kumbhakar and Lovell (2000:15) argue that technical efficiency is purely a physical notation that can be measured without recourse to price information and without having to impose a behavioural objective on producers.

### 3.4.2 Specification of Technical Efficiency

Literature on technical efficiency suggests several approaches to measuring it, broadly grouped into *parametric* and *non-parametric* frontiers. A distinction between these two approaches is imminent in technical efficiency specification. The parametric production functions use econometric methods in the analysis, while the *non-parametric* functions employ mathematical programming (Coelli *et al.* 1998; Coelli 1996).

Parametric frontier approaches impose functional form on the production function and make assumptions about the distribution of the error term (Tybout 2000; Little *et al.* 1987) whereas, *non-parametric* frontier approaches do not impose any functional form on the production function and do not make assumptions about the error term. *Parametric* approaches involve estimating contribution of individual factor inputs to the output and changes in output (Y) not explained by changes in inputs are assigned to technical inefficiency.

*Non-parametric* functions utilize factor shares such as weights for constructing total factor indices by combining the individual factor inputs and netting out these from growth indices. The part of growth in output which cannot be assigned to factor inputs is called the total factor productivity or technical efficiency. They encompass models such as variable and constant returns-to-scale in the evaluation of the firm's performance without placing any restriction on the frontier's functional form.

Non-parametric approaches are less prone to the confounding effects of functional forms misspecification. *Parametric* approaches impose a *priori* functional form of the frontier

---

<sup>40</sup> Cross-sectional data involve observations on a number of firms in a particular time period; while time-series entails aggregate industry-level data observed over a number of time periods; and finally the panel data involves a number of firms whose information is observed in a number of time periods (Coelli, 1998 :34-37).

which can either be deterministic or stochastic depending on the random noise modelling ignored in deterministic model but accounted for in the stochastic model (Coelli *et al* 2005).

The most common popular non-parametric functional form used in linear programming has been Data Envelopment Analysis (DEA), which can accommodate multiple inputs even though it does not completely decide on the model choice's nature and does not account for random variation in the data thereby assuming that deviations from the frontier are due to technical inefficiency (Bigsten *et al* 2004; Lundvall *et al.* 2002, Chirwa 2001).

Non-parametric functional models require enormous quantitative data that may not be obtainable in a single survey study like mine. Parametric frontier approaches impose functional form on the production function and make assumptions about the data (Coelli *et al.* 2005). A further distinction is made between the stochastic and deterministic both of which are parametric frontiers.

“The deterministic frontiers assume that all deviations from the frontier are as a result of a firm's inefficiency, whereas the stochastic frontiers assume that part of the deviations from the frontier are due to random events (reflecting measurement errors and statistical noise) and part is due to firm specific inefficiency” (Coelli *et al.* 1998:185). The parametric function is the most frequently used in applied economic analysis (Ngui *et al.* 2007, Lundvall *et al.* 2002; Kimuyu 1999; Bigsten *et al.* 2004; Little *et al.* 1987). The most common functional forms of parametric approaches include the translog and the Cobb-Douglas (with constant elasticity of substitution), which is a restricted translog case.

The stochastic production frontier is motivated by the idea that deviations from the production deviations from the production frontier might not be entirely under the control of the firm. Contrary to the deterministic models where, for instance, external factors such as strikes, bad weather, luck or high number of random equipment failures might

appear to constitute inefficiency and translate into increased inefficiency measures, the stochastic frontier models allow for such random events.

The stochastic nature of the model allows some observations to lie above the efficiency frontier, making the estimates less vulnerable to outliers, which is not the case in deterministic models (Greene, 1993). Stochastic models take into account the influence of factors outside the control of the firm such as trade issues effects (Bigsten *et al.* 2004; Tybout, 2000), measurement error in the level of production, and omitted explanatory variables in the model.

A stochastic model does this by introducing an extra residual term besides the error term which captures firm's inefficiency. In stochastic frontier analysis (SFA), noise and inefficiency are not lumped together as is the case in the deterministic model (Coelli *et al.* 2005). By allowing for errors in the observations, SFA reduces the effects of outliers on the estimated frontier as well as in the estimated technical efficiency.<sup>41</sup> An SFA decomposes the error term into two-sided random error that captures the random effects outside the control of the firm (statistical noise) and another one-sided efficiency component capturing factors within the control of the firm (efficiency) (Battese and Coelli 1993).

Assuming a suitable production function, a firm '*i*' using inputs ( $X_1, X_2, \dots, X_n$ ) to produce a single output  $Y$ , a stochastic frontier production which depicts an efficient transformation of inputs into output is given as:

$$Y = f(\mathbf{X}_n, \boldsymbol{\beta}) \varepsilon \quad (3.1)$$

where  $Y$  is the level of output,  $f(\cdot)$  is the production function,  $\mathbf{X}_n$  denotes the actual input vector,  $\boldsymbol{\beta}$  is the vector of production parameters and  $\varepsilon$  is the disturbance term. The frontier production function is represented by  $f(\mathbf{X}_n, \boldsymbol{\beta})$  which is a measure of maximum

---

<sup>41</sup> Studies conducted to compare between the deterministic frontier analysis and the stochastic frontier analysis find that the former yield lower average efficiency levels than the latter because the former attributes all unexplained variations in output to inefficiency (Coelli *et al.* 2003; Tybout 2000; Greene 1993; Roberts and Tybout, 1997).

output obtainable from various input vectors as shown in (2.1). The observed production of firm 'i' will fall short of the frontier by some amount  $\varepsilon_i$ , whereby,

$$\varepsilon_i = f(\mathbf{X}_i, \boldsymbol{\beta}) - Y_i \quad (3.2)$$

As already discussed, statistical estimation of such a production frontier can be either through deterministic or stochastic approaches. A deterministic frontier approach takes the following general form:

$$Y = f(\mathbf{X}_i, \boldsymbol{\beta}) \varepsilon^u \quad (3.3)$$

Where  $Y$  and  $X$  are as defined above (Equation 3.1) and  $u$  is a non-negative error term representing technical inefficiency. A deterministic production frontier is estimated without consideration of the possibility of measurement error, statistical noise or random exogenous variations (Ngui, 2008; Coelli *et al.* 1998; Battese and Coelli, 1992; Latruffe *et al.* 2004). This method permits ready calculation of the degree of inefficiency for each firm in terms of divergence of output from the production frontier (Greene, 2002).

It is unsatisfactory from an econometric point of view, because random variations in output across firms, and even measurement error, will wrongly be attributed to inefficiency within the firm's control (Battese and Coelli 1995; Ngui 2008; Battese and Coelli 1992). A deterministic frontier model is criticized because it imposes a particular functional form on the technology.

The 'stochastic frontier' model (SFM) developed independently and simultaneously by Aigner, Lovell and Schmidt (1977), Meeusen and van den Broeck (1977), and Battese and Corra (1977) was in response to criticisms levelled against deterministic frontier. The original specification involved a production function with an error term incorporating two components, one to account for random effects ( $v_i$ ) and one to capture the unobservable inefficiency factor ( $u_i$ ).

Besides incorporating inefficiency term into the analysis (as do the deterministic approaches), SFM also captures the effects of exogenous shocks beyond the control of a firm, but which causes actual production to deviate from the frontier (noise). Moreover, this type of model also covers errors in the observations and in the measurement of output (Jondrow *et al.* 1982) as shown in equation (3.4):

$$Y = f(\mathbf{X}_n, \boldsymbol{\beta}) \varepsilon^{v-u} \quad (3.4)$$

-where variables are as defined in equation (3.1);  $\varepsilon^{v-u}$  is the decomposed error term alternatively stated as  $\varepsilon_i = v_i - u_i$  for the  $i^{\text{th}}$  firm.

The compound disturbance term  $\varepsilon_i$  has two terms. The first,  $v_i$  is a random disturbance assumed to be distributed identically and independently across firms with zero mean and constant variance [ $N(0, \sigma_v^2)$ ]. It is also assumed to be independent of  $u_i$  (Coelli *et al.* 1998:185; Bigsten *et al.* 2000:3). The second,  $u_i$  is firm-specific effect that reflects firm efficiency and management skills. Its distribution is one sided, non-negative ( $u_i \geq 0$ ), reflecting the fact that the output of the  $i^{\text{th}}$  firm lies on or beneath the frontier.<sup>42</sup>

The distribution of  $u_i$  can take many forms although it should not be symmetric. Meeusen and van den Broeck (1977: 438) suggest that “there is no priori argument to suggest that one form of distribution is superior to another, even though different assumptions yield different efficiency levels.” While in some studies  $u_i$  is assumed to have an exponential distribution (Aigner *et al.* 1977; Caudill *et al.* 1995; Battese and Corra, 1977), others assumed that it has a half-normal distribution (Meeusen and van den Broeck 1977; Coelli *et al.* 1998; Coelli *et al.* 2005).

Following the latter argument,  $u_i$  is assumed to be independently and identically distributed across firms as the non-positive part of  $N^+(\mu, \sigma^2)$  distribution truncated above at zero. Both  $v$  and  $u$  are assumed to be distributed independently of the exogenous variables in the model (Greene 1993; Balcombe *et al.* 1996; Bigsten *et al.* 2000, 2004).

<sup>42</sup> If  $v_i = 0$ , the production function lies on the stochastic frontier and production is technically efficient; on the other hand, if  $v_i > 0$ , production lies below the frontier and is inefficient (Jondrow, *et al.* 1982; Battese and Coelli, 1993).

The specification of the stochastic production frontier model allows for a non-negative random component in the error term to generate a measure of technical efficiency or the ratio of actual to expected maximum output, given inputs and technology (Jondrow *et al.* 1982). The term  $u_i$  captures deviation of the firm's output from the stochastic production frontier  $f(\mathbf{x}_i, \boldsymbol{\beta})$  due to factors under the control of the firm (Aigner *et al.* 1977; Battese and Coelli, 1993). It represents a variety of features that reflect inefficiency such as firm-specific knowledge, the will, skills and efforts of management and employees, work stoppages, material bottlenecks, and other disruptions to production (Aigner *et al.* 1977).

This term ( $u_i$ ) is further assumed to be uncorrelated with input levels. The term  $v_i$ , on the other hand, captures factors that cannot be controlled by the firm, yet they cause output to deviated from production frontier; such factors include labour market conflicts, luck, weather, machine breakdowns, variable input quality, measurement errors, strikes, and omitted variables from the functional form (Aigner *et al.* 1977). These factors are outside the control of a firm but they do affect the output level.<sup>43</sup>

Equation (3.1) can be modified by incorporating the technical efficiency explanatory variables on the first stage of estimation. Therefore, assuming a transcendental logarithmic (hereafter referred to as translog) production function to represent the underlying production technology, the stochastic production function for N firms can be written as stated in equation (2.5). This is the most widely used flexible functional form which does not impose restrictions on data, which is also consistent with works of Aigner *et al.* (1977), Jondrow *et al.* (1982), Coelli *et al.* (1998) and Coelli *et al.* (2003). The general stochastic model can therefore be expressed as:

$$\ln y_i = \beta_0 + \sum_{j=1}^J \beta_j \ln x_{ji} + \frac{1}{2} \sum_{j=1}^J \sum_{k=1}^J \beta_{jk} \ln x_{ji} \ln x_{ki} + v_i - u_i \quad (3.5)$$

$$\beta_{jk} = \beta_{k(j)}$$

which can also be expanded to equation (2.6) as: -

<sup>43</sup> Recent studies in manufacturing sector in African countries applying this approach include Ngui (2008), Chapelle and Plane, 2005; Ajibefun and Daramola, (2003), Bigsten, *et al.*, (2004) and Lundvall *et al.* (2002)

$$\ln y_i = \beta_0 + \beta_1 \ln x_{i1} + \beta_2 \ln x_{i2} + \frac{1}{2} (\beta_3 (\ln x_{i1})^2 + \beta_4 (\ln x_{i2})^2) + \beta_5 \ln x_{i1} * \ln x_{i2} + v_i - u_i \quad (3.6)$$

where,  $j = 1, 2, \dots, j$  represents various inputs,  $\ln y_i$  represents the natural logarithm of the value of the output of the  $i^{\text{th}}$  firm, while  $\ln X_{ij}$  represents the natural logarithm of  $J$  production inputs of the  $i^{\text{th}}$  firm,  $\beta_j$  is a vector of parameters to be estimated, and  $i$  represents the  $i^{\text{th}}$  firm in a sample of  $N$  firms included in the study. The estimation of technical efficiency for garment industry in Kenya follows Battese and Coelli (1995, 1993) whereby equation (3.5) is further modelled in Chapter 4.

## PART II: EMPIRICAL LITERATURE REVIEW

In the review of theoretical frameworks for understanding production and trade issues in the broad context of globalisation; I have seen that value chains analysis indisputably allows one to make a clear picture of how trade is organised. The role of global buyers who control activities within the value chain through their competencies in the design, together with the sourcing of raw materials and marketing is discussed. For local producers in developing countries to make inroads in their competitiveness building, they must upgrade. What are the most possible routes? This can be answered by looking at the empirical literature that links local upgrading patterns to global value chains.

### 3.5 Upgrading in Global Value Chains

A general consensus in value chain studies is that chain governance matters for any type of upgrading should be experienced by local firms and clusters particularly in buyer-driven value chains (Kaplinsky and Morris, 2007; Gereffi *et al.* 2005; Schmitz and Knorringa, 2000; Dolan and Tewari, 2001; Bair and Gereffi, 2001; Bini 2004, McCormick and Schmitz, 2002). In addition, for different commodities, chain governance is structured differently which may impact on patterns of upgrading.

It takes place in a differentiated process such that not all firms will experience every type of upgrading at once. Humphrey and Schmitz (2000) formulated typologies for upgrading

particularly with respect to developing countries which suffer from 'immiserising growth' due to insufficient upgrading. These typologies include process, product, functional and intersectoral upgrading.

Participating in the global value chains brings opportunities and dangers to producers in developing countries. The global participation puts firms on a potentially dynamic learning curve which implicitly facilitates upgrading (Gereffi, 1999; Kaplinsky, 2000). In such a quasi-hierarchical value chain global buyers seek to govern their chain for two reasons: product definition and risk of supplier failure (Gibbon, 2000; Bair and Gereffi, 2001; Humphrey and Schmitz, 2000).

The more the buyers pursue a strategy of product differentiation, through design and branding, the greater the need to provide suppliers with precise product specifications and ensure that these specifications are met (Gereffi, 1999). The increasing importance of non-price competition based on factors such as quality, response time and reliability of delivery means that buyers have become more vulnerable to shortcomings in the performance of suppliers. Global buyers govern their chains to ensure that suppliers adhere to these non-price factors.

The main danger of participating in the global economy is getting locked into the race to the bottom: competing by paying low wages, disregarding labour and environmental standards, cutting corners in the production process and avoiding taxation (Schmitz, 2004:1). With the growing division of labour and global dispersion of the production of components, systemic competitiveness has become increasingly important; and in order to achieve export growth and rising incomes, it seems essential for local enterprises to 'upgrade'.

Generally speaking, upgrading involves making better products more efficiently, or moving into more skilled activities. It involves organizational learning so as to improve the position of firms in trade networks and it helps a firm to get out of being locked in the race to the bottom. To a firm, upgrading implies getting better – producing better in a more efficient way (Schmitz and Knorringa, 2000). Things are more difficult in reality

Because upgrading is not an automatic process (Schmitz, 2006:555). Moreover, upgrading is not a straightforward process; it requires continuous investment in people, organization and equipment. More importantly, producers' own efforts may not be enough to achieve the expected level of upgrading; hence there is need for collaboration with buyers. However, buyers do not always provide necessary support for buyer to upgrade especially when this form of upgrading might infringe on core activities. Some buyers challenge firms to upgrade but without supporting them towards this endeavour. In the case of garment industry, developing a new product line every three months does not imply upgrading, it is a routine process driven by the changing fashions. Nonetheless, if a firm has been producing T-shirts, sweatshirts and polo-shirts for a number of years and then shifts to jeans and shirts so that it can offer a more complete product range and establish a competitive advantage, then this can be regarded as upgrading (Memedovic, 2004).

If a firm also establishes its own unit with sophisticated finishing machines, so that the products' shrink is lowered, then this may amount to process upgrading. Functional upgrading is related with options which go beyond production to include designing, branding or setting up a franchise network and opening own outlet shops.

### **3.5.1 Consensus on Product and Process Upgrading**

Most of the existing studies on upgrading have tended to focus on global and captive (quasi-hierarchy) chains, to the extent that value chain studies have become synonymous with global value chains. Navas-Alemán (2006) calls this a reductionism which emanates from manageability convenience when cutting through the real world complexities. In strong governance chains buyers exerting power on other actors determine the nature and extent of upgrading patterns for local producers.

In most cases, empirical evidence shows that in captive chains, producers are quick to experience process and product upgrading (Schmitz, 2006). In the case of Brazilian footwear, Bazan and Navas-Alemán (2004:111) further argue that the US value chain characterised by tight and hierarchical governance enables local producers to attain

process and product upgrading but not functional upgrading. McCormick (2007) asserts that functional upgrading seems to offer producers in developing countries an immediate possibility of higher returns.

The starting point in analysing upgrading in GVC is always referenced to Gereffi's optimistic view that producers entering captive (buyer-driven) chains have good prospects for upgrading within production and subsequently into design, marketing and branding (Humphrey and Schmitz, 2000; Schmitz, 2006). On the basis of his research on the garment chains, (Gereffi, 1999) argued that East Asian suppliers working for large US buyers were on an upgrading trajectory from OEM all the way to ODM and even OBM.

Gereffi attributes this to 'organisational succession' a process by which manufacturers start producing for buyers catering for the low end of the market and then move up to buyers targeting more sophisticated market segments: "This succession of foreign buyers thus permitted manufacturers to upgrade their facilities as they met buyer demands for more sophisticated product (Gereffi, 1999:53). The main assertion by Gereffi is that firms improve their chances of taking up more sophisticated tasks through extensive learning prompted by the insertion into GVCs. With time, the relationship between procedures and buyers become triangular coordination that facilitates upgrading.<sup>44</sup>

Bair and Gereffi (2001) examined the governance structure of a dynamic export cluster located in Torreon, Mexico which is involved in the manufacturing of jeans. This cluster, they argue underline the power of the US retailers over their suppliers – a clear example of captive networks. In 1993, the producers were subcontracted by US buyers to carry out single function – assembly – while US firms undertook the remaining eight activities.

Seven years later, in 2000, the Mexican firms were involved five out of nine activities, leaving only design, marketing and retailing completely in the hands of the US buyers (Figure 3: 1894; Bair and Gereffi, 2001). In 1993, export chains to the US were buyer-driven and took the form of outsourcing organised by the US garment retailers. In 2000, a

---

<sup>44</sup> See also Kaplinsky and Morris (2002); McCormick and Schmitz (2002) for more details on triangular manufacturing.

significant portion of full-package orders in Torreon was being handled by a small number of first tier manufacturers with capabilities and capital needed to coordinate full package networks.<sup>45</sup> This represented a significant functional upgrading which was accompanied by improvements in workers' skill levels, wage and working conditions.

The buyers in this chain issued Codes of Conduct related to the final product, and the work process which required firms to achieve some minimum working conditions such as space, cleanliness, ventilation and visibility. They were required to display the Codes of Conduct from their client. Unfortunately, no manufacturer in Torreon markets its own apparel brands in the United States....and Torreon producers of US brand is able to sell its branded output directly in Mexico (2001:1895). They were confined to translating the buyer's specifications into practical knowledge that is necessary for production. This therefore suggests that industrial upgrading could form part of a country's development strategy and could also be applied to specific clusters. This demonstrates how the type of links that connect local firms to global chains shape development outcomes in export-oriented manufacturing.

The need for high investment by producers is stressed in the upgrading patterns of most commodities (Humphrey and Schmitz, 2004). It is argued that upgrading requires a continuous investment in people, organisation and equipment by individual firms. Because resources to undertake such investment are huge, firms in developing countries have to depend on support from buyers for their upgrading. It is not always the case that buyers will provide support for this upgrading.

Gibbon (2000) finds that buyers exert pressure on the clothing manufactures in Mauritius to improve their processes and products without providing active support to cope with these pressures. Morrison *et al.* (2008) discount the argument that firms inserted in GVC will upgrade and perform better. They argue that in many GVC studies, there is no attempt to examining the causes and effects of upgrading (p. 45). There is a tendency to attribute any good outcome emerging from a buyer-producer relationship to upgrading

---

<sup>45</sup> Gereffi *et al.* (2005) observe that full package production requires offshore contractors to develop their capability to interpret designs, make samples, source for the needed inputs, monitor product quality, meet the buyer's price, and guarantee on-time-delivery. This involves the more complex forms of coordination, knowledge exchange and supplier autonomy typical of relational value chains.

which might be misleading. To them the upgrading process is not mechanistic and risk less as often portrayed in GVC studies.

Local firms will need to invest heavily in technological and learning capabilities to be able to upgrade (in line with Schmitz, 2004; Kishimoto, 2004). This will be determined by the complexity degree, tact and appropriateness of the technology that in turn affect lead actors' strategies. Their study recommends use of firm level surveys in carrying out GVC studies to be able to unmask technological capabilities and its determinant.

Further evidence in the clothing industry shows that, buyers in captive chains continue to set terms under which other actors operate, even though they have passed on coordination of the lower part of the chain to full-packaged coordinators. Studies in Mauritius and Madagascar show that chain coordinators such as Li & Fung ([www.linfung.com](http://www.linfung.com)) continue playing a key role in connecting producers in with the US buyers through triangular manufacturing (Morris and Sedowski, 2006; Gibbon, 2000, 2003; Morris *et al.* 2005). Gibbon (2003) stresses that the power of global buyers in the apparel value chain has been growing due to globalisation. In such a case, upgrading by the local manufacturers is confined to process and process upgrading and no evidence of functional upgrading.

In a study of the footwear sector in various countries Schmitz and Knorringa (2000) stressed the links between the GVC leaders and upgrading looking at the obstacles and enabling the conditions affecting the buyer – producer relation. Schmitz and Knorringa (2000) identify three sets of circumstances that might explain buyers' role in upgrading. Whether the producers are at an early or advanced stage of operation; whether they operate in price or quality-driven chains; whether upgrading is limited to production or extends to design and marketing and whether buyers source directly or indirectly. They observed that 'the problem is that marketing and often design, are part of the buyers' own guarded core competence', so they concluded that 'there is conflict' and this is particularly evident in non-production activities, where one would not expect the lead firm to share their core competence with others in the value chain (Morrison *et al.* 2008).

In the same vein, Bazan and Navas-Alemán (2004) and Navas-Alemán (2006) studying the shoe cluster of Sinos Valley in Brazil stress that ‘buyers are the undisputed leaders in the chain, exerting control over intermediaries, local producers and often input suppliers’ (Bazan and Navas-Alemán, 2004:115). Further, they argue that buyers have categorically resisted sharing their knowledge on higher value added activities such as design, branding, marketing and chain coordination.

‘It is the asymmetry of power between them and local producers that often prevents buyers from supporting local suppliers’ upgrading’ (Morrison *et al.* 2008:46). A firm that joins GVC can concentrate on the chain’s production aspects and become a ‘world class’ producer but can fail to invest time and energies in other functions of the chain (Schmitz and Knorringa, 2000). Eventually, the firms become trapped in their current level of upgrading which in buyer driven chain leaves them vulnerable.

The changing nature of fresh vegetables trade between Kenya and the United Kingdom highlights a shift from market-based global value chain governance to more explicit coordination; revealing the importance of the competitive strategies of the UK supermarkets in driving this change (Dolan and Humphrey, 2000; Dolan and Tewari, 2001). Beginning in the mid-1980s, UK supermarkets began to use the quality and variety of their produce offerings as a main source of competitive differentiation, and in doing so generated several distinct forms of governance at different stages in the chain in which they became more powerful actors (Dolan and Tewari, 2001:98). They pursued these strategic goals by increasing explicit coordination in the value chain.

Instead of purchasing through wholesale markets as was the case before, they developed closer relationship with UK importers and Kenyan exporters, and moved to renewable annual contracts with suppliers whose capabilities and systems were subject to regular monitoring and audit. ‘The interaction became more complex and relational whereby the buyers and suppliers got together on product development and consumer research’ (Gereffi *et al.* 2005). The chain has remained largely buyer driven where customers define product standards and quality requirements, control brands, design and

distribution. Buyers support efforts for the process and product upgrade which are labour intensive and less remunerative activities.

In the fish value chain in Uganda, Kiggundu (2007) finds that upgrading is mainly confined to the process and a bit of product upgrading. The most interesting finding is that process upgrading in this cluster was largely driven by developments in the international trading environment particularly the new European Union Legislation known as Council directive 91/493/EC. In this chain, process upgrading was an outcome of several bans of fish from Lake Victoria in mid-1990s.

The buyers' involvement in the process upgrading was minimal due to lack of adequate resources producers and the complexity of requirements. Instead, it is the state that played a key role in facilitating the learning and process upgrading through direct support and sound policies. Buyers were actively involved in the product upgrading which was triggered by a shortage of fish and was implemented by the state. Although product upgrading was at infancy stage (Kiggundu, 2007:182) observes that buyers were willing to support this type of upgrading because of the anticipated economic gains.

She argues that it is possible for state to stimulate upgrading through local policies and enforcement. On upgrading, the study finds that this chain is highly quasi-hierarchical in which buyers were helping local export producers to pursue product upgrading, as long as they retained design and marketing activities. Tapping into knowledge bases through linkages with external actors overseas seems to be an important element for upgrading clusters in Africa.

Using leather industry in Ethiopia as a case study, Bini (2004) investigates the prevalence of buyer-producer conflict of interest as the cause of failure of buyers to support upgrading in the lower end of the chain. Evidence presented confirms that insertion in global value chain does not lead to particularly to functional upgrading, but firms inserted in GVC can benefit from international production networks. Large scale international buyers appear to be willing to cooperate with the Ethiopian manufacturers in process

upgrading and in transferring specific skills, but are not prepared to support product and functional upgrading which may counter their interest (p. 364).

Insertion in this chain may result initially in faster upgrading but the loss of producer autonomy undermines the future upgrading prospects. In contrast to the case of Sinos Valley where cooperation between local and powerful external buyers undermines the ability of the firms to cooperate within the local system (Schmitz 1999, 2004); the Ethiopian case finds that firms with a higher level of cooperation with external buyers are the ones more involved in cooperation within the local systems. This was attributed to the low level of development of Ethiopian tanneries (incipient stage) which does not pose any threat to international buyers (this is elaborated in Knorringa and Schmitz, 2000; Schmitz, 2005; Gibbon, 2000).

The evidence presented here clearly demonstrates that in GVC, majority of which are governed by quasi-hierarchy relationship at best, producers can only achieve process and product upgrading irrespective of the sector or industry. The core competence of global buyers is seen to lie in research and development, design, branding, marketing, and the coordination of suppliers in the chain. As a result of this, buyers are unwilling to support or at times they curtail efforts by local producers to upgrade their functions. This raises fundamental questions: Is functional upgrading possible? Under what circumstances do powerful global buyers support functional upgrading of the comparatively weak local producers?

### **3.5.2 Is Functional Upgrading Possible?**

There is no agreement on whether insertion in GVC provides a route for functional upgrading in the chain. According to Schmitz (2006) citing Hobday (1995) for electronics industry says that:

*"... by the late 1980s foreign buyers and TNCs had begun purchasing goods under the so called ODM, allowing local companies to exploit their design talents and thereby gain more of the value added. Sometimes the latecomers designed goods independently, using their own knowledge of the international market. In other cases they worked closely with foreign buyers and TNCs. The emergence of ODM signified a new phase of latecomer*

*technological progress, indicating that local firms had internalised much of the ability to understand market needs, then design, develop, and make electronic products for overseas markets. As with OEM, the ODM system allows the foreign buyer or TNC to brand and distribute the goods ... enabling the late comer to circumvent the need for heavy marketing investment” (Schmitz, 2006:557).*

In such case, a producer is able to experience functional upgrading by initially producing for global buyers and then moving up the chain later on. We argue that this upgrading process might be found only in electronics as evidenced by Kishimoto’s “leveraging competence” argument (Kishimoto, 2004).

In other sectors, “buyers are more likely to provide active support where the risk of supplier failure is high Schmitz (2005:14). If it is easy to replace suppliers, active buyer support is less likely”. Buyer support will be forthcoming when the supplier is at an incipient stage as opposed to the advanced stage (Schmitz and Knorringa, 2000; Schmitz, 2006). Functional upgrading is facilitated by buyers as long as its occurrence does not threaten buyers’ core competence. Research in global value 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 (Tewari, 1999; Schmitz and Knorringa, 2000; Humphrey and Schmitz, 2004).

Bazan and Navas-Alemán (2004) and Navas-Alemán (2006) confirm that in the Brazilian footwear, leading export manufacturers for many years refrained from making substantial investment in design and marketing content to remain subordinated to their US buyer. They feared that advancing into design and marketing would upset their main buyer who accounted for 80 per cent of their output and close to 40 per cent of the Sinos Valley cluster’s export. Only after a long delay did they make inroads into own design, branding and marketing, prompted by rapid declining profit margins in contract manufacturing for their main buyers.

In the clothing industry, Gibbon (2000) finds no evidence of upgrading in the tightly controlled chains leading from Mauritius via the Far East to the US. In the chain leading to the EU, a number of local producers tried to move up the value chain by developing

their own brands but had little success. Producers who had extended their design capacity and own brand claimed that this exercise's outcome was disappointing and costly. Gibbon (2000:42) argues that Mauritian companies were proved to be financially and managerially weak, too physically and socially remote from end markets (and probably material ones too) and too internally inflexible to manage this form of functional upgrading. They finally had to move back to the 'basic products' and capitalise on higher volume.

Dolan and Tewari (2001) present an interesting case of Tamil Nadu's (TN) textile industry in India which appears to have achieved functional upgrading in a period of 15 years. They observe that in the early 1980s, India did not export any textiles to the US or the EU. By 2000, India accounted for about 30 per cent of the global trade in cotton yarn and about \$900million in cotton knitwear exports; of which 50 per cent of yarn, 25 per cent of cotton fabric and over 80 per cent of cotton knitwear came from TN (Dolan and Tewari, 2001: 95). Buyers who sourced from TN were medium wholesalers in the US, EU and East Asia as well as several high-end retail chains such as Gap, Banana-Republic, Levis Strauss Liz Claiborne and Levis. Some exporting firms were expanding forward linkages in the chain with a view to expanding their capabilities and reposition themselves in the global markets.

The expansion involved moving from spinning to garment production, a forward integration into distribution and logistics, and expansion into new markets; all of which are indicators of functional upgrading.

A large number of spinning firms in TN after accumulating capital from the exports, integrated forward into apparel and garments by establishing new companies or purchasing existing ones to position themselves in a new and higher value added growth sector. In the upgrading process they distinguished themselves from other garment firms by entering stable, non-quota segments of the apparel chain. Instead of ordinary garments, these firms were manufacturing work uniforms for public and private sector employees (postal workers, airline ground staff, hotels) or industrial textiles where the

volatility of design is much less of an issue and where typical branded retailer has less of a stake and interest (Dolan and Tewari, 2001 p. 98).

For functional upgrading,, firms in developing countries must create investments and have a commitment to venture in the closed market away from the conventional approach of OEM→ ODM→ OBM transition. This issue shall be discussed in the next section.

### **3.5.3 The Role of Domestic Value Chains in Upgrading**

The role of domestic markets in creating upgrading potential for manufacturers in developing countries is relatively new in the GVC literature and can be traced to Tewari (1999), Kishimoto (2003), Bazan and Navas-Alemán (2004), Schmitz, (2006) and Navas-Alemán (2006). These studies show that firms specialising in the national market are more likely to upgrade. Having acquired capabilities in the national market, these firms begin to break into markets of neighbouring countries and other parts of the world (Schmitz, 2006: 568). Tewari (1999), reports that in Ludhiana (India), a knitwear cluster that exports its own design to the advanced countries.

An interesting finding in this study is that exporters in this cluster prefer to work with small foreign traders, rather than large retailers, because these relationships are more symmetrical and have given them the space for learning gradually in the context of small orders.

In order to do this, the producers have to develop their own products (rather than produce to somebody else's specifications).<sup>46</sup> Producers in this cluster hire designers who travel to Europe to study about the market needs and come up with designs that suit the market. While serving their buyers in the European market, they continue to produce for the Indian domestic market. The Ludhiana case is a show case of how a firm inserted into two chains simultaneously can acquire upgrading capabilities (Tewari, 1999:1660).

---

<sup>46</sup> See also Schmitz (2006: 560) and Navas-Alemán (2006:26)

Firms that managed to export to the EU were those that had previously developed products for the high-end domestic market. It was the domestic market's experience that gave them the design and quality capabilities needed to penetrate into the European market.

India has been cited as one of the major beneficiary of the post-quota regime along side China (Kaplinsky and Morris, 2006: Asian Drivers Team, 2006). Tewari (2006), shows how the Indian textile and clothing industry has historically taken a different route of integration into the global markets; which puts it in a totally different league with its competitors when we are talking of upgrading in GVCs. India's recent surge in clothing exports has occurred despite the lack of major FDI; the lack of entry into preferential regional trade agreements with buyer countries and lack of any significant direct role of global buyers. This is in total contrast to the other leading textile and clothing exporters such as China, Hong Kong, Bangladesh, Mauritius, and Madagascar.<sup>47</sup> Drawing from historical legacies (Tewari 2006, 2004) argues that the Indian textile and clothing industry has depended on four key guidelines:

- i. Small scale operation and small batch production initially driven by expansion licensing and reservation policies
- ii. A proliferation of generalist skills in the production workforce (master tailors and master weavers) rather than narrower specialisations associated with a deeper division of labour automation and large scale assembly volumes
- iii. Low labour costs (but alleged to have low productivity)
- iv. Large domestic market, and home market focus

When India adopted new trade policies in 1985, with an exception to relaxing expansion, licensing and reservation policies all others guidelines continued. India's history of small scale operation in apparel has shaped its emerging export trajectory in two important ways. "It has forced producers to learn how to manage small production runs, handle uncertainty and demand variability in cost effective ways. It has helped insert Indian exporters into export channels that in effect bypassed the largest global retailers who sought low prices and large volumes" (Tewari, 2006:1335). This has influenced the nature of buyer-producer relations.

---

<sup>47</sup> In these countries growth of textile and clothing industry is triggered by presence of FDI, preferential regional trade agreements and dominant global buyers – the "*Wal-Martization*" of apparel sector (Tewari, 2006).

Tewari (1999) argues that Indian exporters are tied to small and medium-sized overseas buyers in advanced countries. This has eliminated overdependence on global buyers who normally push producers to assembly work.<sup>48</sup> “Most of the small buyers that Indian exporters worked with, welcomed design inputs from their suppliers, sought greater variety over a wider range of products and services and encouraged an enlargement of suppliers tasks and capabilities” (Tewari, 2006).

Buyers were more inclined to build mutually dependable, longer term ties given the costs of repeatedly establishing reliable supply relationship across large distances. Several exporters in Tiruppur, Ludhiana and Bangalore reported having buyers of fifteen or twenty years standing, feedback and tutelage had become important features of their exchange and learning (Tewari, 2006). The study finds that despite the rapid increases in capacity, the industry’s self conception is that large scales of operation (as in China and Bangladesh) are unlikely to be key sources of India’s competitive advantages.

As they scaled up and automated, most firms were reported betting on ‘quality and design’ as the key to future growth. The small and medium scale firms in India have upgraded functionally without being inserted in GVC.

Navas-Alemán (2006) examines opportunities and constraints for upgrading faced by local producers in two Brazilian clusters: footwear and furniture, and their participation in global and national value chains. She finds that in buyer-driven value chains where chain-rents arise from command over product brand names and copyright, firms that participate in quasi-hierarchical chains are confined mainly to process upgrading. Command over product innovation and the capacity to change functions in the chain tend to be controlled by the chain governors in footwear and furniture clusters.

Firms who develop capacity for product and functional upgrading in value chains are only able to achieve this objective by first developing their capabilities in the local market (Kaplinsky and Morris, 2006). Firms in multiple chains with a strong presence in

---

<sup>48</sup> See also Palpacuer *et al.* (2005)

the domestic market were more likely to be experienced in all the three types of upgrading: process, product, and functional upgrading.

### **3.5.4 Is Participation in Multiple Chains Superior to Single Chain Upgrading?**

Evidence presented in previous sections indicates that firms following alternative trajectories without insertion in GVC are more likely to experience all the three types of upgrading because of the nature of buyer-producer relationships that permit extensive and gradual learning.

Tewari (2006) attributes India's exporters' success to the existence of the domestic market where firms develop their capabilities before venturing into export markets. She asserts the mid-1980s domestic reforms were critical in triggering growth in the apparel and textile sectors.

Their initial focus on investment and technical upgrading in the textile and apparel sectors created a tier of strong domestic firms in the spinning and apparel sector, which increased investment, modernised their technical base, diversified their product mix and over time emerged as leading exporters. Exporting firms have continued to produce for the domestic market and this has created synergy for the two markets. In the case of Ludhiana knitwear cluster (Tewari, 1999) found that it is the experience in the Indian domestic market that gave exporters the design and quality capabilities needed to break into the European market.

Navas-Alemán (2006:168) says "Regarding performance, multi-chain producers in both clusters exhibited consistently higher performance results than their domestic-only or export-only counterparts. In the case of the Sinos Valley, there were significant and positive correlations between being a 'multi-chain' producer and increase in profits and quality. These results might indicate that following a 'multi-chain' strategy is perhaps the best route for producers to upgrade activities".

She further argues that these producers were able to utilise the knowledge created in the domestic chain to export to the Latin American market. Schmitz (2006:562) found that firms which are most successful in functional upgrading and exporting to new markets were companies that had acquired their design and marketing experience in the national markets. Bazan and Navas-Alemán (2004) found that while the European chain seemed to be slightly less obtrusive for functional, quasi-hierarchical buyers generally supported process and product upgrading. Domestic firms on the other hand pursued product and process upgrading strategies as well, but they were usually linked to their investment in the functional upgrading which finally enabled them penetrate new markets in the region.

Kishimoto (2004), investigating upgrading in Taiwanese computer industry found out that the local producers experienced fast learning when working as OEM suppliers in GVCs achieving ODM production stage within relatively short periods. Producers who progressed to ODM and OBM did not withdraw from OEM where they reserved most of their production capacity. The OEM facilitated them to keep abreast in the market and technological development which they would use when producing for the ODM and OBM chains. Firms may be OBM in one market and still OEM in another while pursuing a growth strategy based on synergies between different business activities. I shall conclude by saying that being in multiple chains appears to support functional upgrading for producers in large developing countries.

### **3.6 Does Technical Efficiency Always Result in Upgrading in Kenya?**

Why do garment manufacturing firms remain focused on the domestic market? What limits their entry into foreign markets? How can improvements in their access be brought about? These are questions central to policy making for the garment industry in Africa. Some of the answers can be found from work carried out in the manufacturing sector surveys (Bigsten *et al.* 1999, 2004; Bigsten and Kimuyu, 2002; Söderbom and Teal, 2001; Ngui 2008). It has been found that most large firms specialise in exporting even though some export only a proportion of their output. Some export to the regional market while others export to international markets. One of the arguments is that exporting firms are more efficient than non-exporting ones.

The finding that exporting garment firms are more efficient than non-exporting firms is a general one. An important issue is whether it is efficiency which generates exporting or if firms which export become more efficient in doing so. There is evidence to suggest that both factors are at work (Bigsten and Kimuyu, 2002). Lundvall *et al.* (2002) find that efficiency plays a role in the exporting decision across the manufacturing sector in Kenya.

According to Bigsten *et al.* (2004) exporting offers maximum scope for the increased discipline of competition and contact with foreign customers and also provides scope for learning opportunities. In the garment's industry case, exporting firms may learn about product design and new technologies or management techniques from the foreign buyers to whom they export. This may diffuse to other domestic firms not directly engaged in trade (Tybout, 2006; Biggs *et al.* 1994; Aw and Hwang, 1995).

Kimuyu (1999) applies a probit model to examine the determinants of export propensity amongst Kenya's manufacturing sector. The study finds that labour force, firm size, capital acquisition, and competitiveness dummy are significant in explaining export propensity. A similar study by McCormick *et al.* (2002) focusing specifically on export propensity among garment microenterprises found that age of the firm, access to credit, gender and education of the owner, were significant explanatory variables determining whether a firm participated in the export market or not.

Mengistae and Pattillo (2004) empirical analysis revealed that efficiency (TFP) of exporting manufacturers is 17% higher than for non-exporting firms across the three countries. The authors show that the average premium for direct exporters is close to 22%, a figure, the authors' claim, that underestimates the premium for those that export to destinations outside Africa. They found the productivity premium for direct exporters outside Africa that reaches a staggering 42% (see Mengistae and Pattillo, 2004: 330-334). The study does not claim to determine the causality between productivity and exporting but, the authors argue, their finding is sufficient enough to warrant a support for open trade and an external trade regime that supports export orientation. Thus, there is a supporting empirical evidence for export-oriented development strategy at least from

productivity perspective. There is therefore a need to blend such export orientation with upgrading potential of garment firms in developing.

In this study, I moved a step further to investigate how such explanatory variables affect the export propensity, technical efficiency and upgrading. I confined my study to the garment industry so as to eliminate heterogeneity among different industries within the manufacturing sector.

Chirwa (2001) argues that the structural adjustment programmes pursued by most African governments in 1980s led to the liberalisation of the domestic economy- output and input markets and opened the economy to international competition. The economy openness coupled with the incentive structure encourages the foreign direct flow investment in the economy (Ngui *et al.* 2007; Biggs *et al.* 1996). The foreign companies' entry into the market may influence local firms' productivity in three main ways:

The ensuing competition will compel domestic firms to improve their production, management styles and techniques (Chirwa, 2001: 91). Local firms may benefit from direct and indirect technology transfer from foreign firms. If new opportunities are created for local companies as a result of the entry of foreign ones, capacity utilisation is enhanced and may lead to improvement in the total factor productivity level (Ngui, 2008; Chirwa, 2001).

Granér and Isaksson (2002) underscore the importance of manufactured export in strategies for expanding industrial production and overall growth. They argue that increased international competition enhances firms' productivity thus promoting growth. Quoting Helleiner (1995), these authors argue that increased trade diversification emanating from manufacturing exports has a stabilising effect and earnings from manufactured exports offer better support for stable growth compared with primary exports. Exporting firms tend to be more technically efficient and operate on a larger scale than their domestically oriented counterparts. They are also more capital intensive, large size and have high degree of foreign ownership (Granér and Isaksson, 2002: 181).

Econometric analysis shows that more technically efficient firms tend to become exporters and their technical efficiency levels do not seem to affect their export share. These findings support the existing theories of the importance of future profitability and sunk costs of entering into the export market. Given the arguments in favour of export-oriented growth through the structural reforms, exporting garment firms are expected to have improved efficiency provided that they have room to make necessary adjustments.

### **3.7 What does the MFA Termination mean for the Garment Industry?**

In the post MFA period where export quotas no longer apply, economic vulnerability of global business model based on production fragment is exposed. Audet (2007) observes that without quota restriction on the amount of production in a particular country, it can become cheaper for it to produce textiles and clothing to compete in the world markets thus avoiding input transportation costs, time delays, and the management time needed to coordinate a fragmented supply chain. Emerging evidence articulates that in the post MFA competitive environment, the most vulnerable countries are the small and geographically-remote developing that has solely handled sewing operations.

Producers in Kenya can no longer rely on displaced production from quota bound countries to boost their exports (World Bank, 2007; Rolfe and Woodward, 2005). In order to attract buyers, they must be cost competitive (within the margin of preference they receive in the developed country export markets); able to deliver to the market on-time; and be prepared to meet quality and service requirements associated with global value chains.<sup>49</sup> In the new environment, garment industry must adopt the upgrading technique to maintain its competitiveness.

Evidence suggests that the full impact of MFA termination has not been felt in most countries because of safeguards that the US and EU negotiated on China accession (Adhikari and Yamamoto). These safeguards are ending by December 2009 which will

---

<sup>49</sup> While low wages can still give developing countries a competitive edge in world markets, quick turnaround time are playing a far more crucial role in determining international competitiveness in the fashion-oriented and time-sensitive textiles and clothing markets.

completely change the global trade dynamics in textile and clothing. The challenging issue of most of the garment industries in Africa and indeed Kenya are driven by footloose market seeking FDI, which can relocate any time when these incentives diminish.

Studies suggest that the MFA termination has significantly altered the rules of trade in the textile and clothing industry. Global competition has intensified under the new quota-free trading rules (World Bank, 2007; McCormick *et al.* 2006; Nordås 2005; Adhikari and Yamamoto, 2007). China, with stable supply networks and well developed capacities for scaling up has been classified as the big winner, followed by India, Mexico and some East Asian and Eastern Europe countries.

Smaller countries that had benefited from assured, though limited access to export markets under quota are loosing out (Adhikari and Yamamoto, 2007). One of the outcomes of the MFA termination has been profit squeeze and increased demands by buyers (McCormick *et al.* 2006; Kaplinsky *et al.* 2006). The safeguard measures negotiated by the US and EU cushioned some of these countries against the predictions made prior to 2005 (World Bank, 2007; Tewari, 2006).

In Kenya, the MFA termination impact has threatened opportunities for industrialisation generated by AGOA. This has been the case in other SSA countries that had emerged as garment products producers (McCormick *et al.* 2009; Phelps *et al.* 2009; Kaplinsky and Morris, 2008). The derogation of the origin rule under the AGOA is bound to end in 2012 and its renewal is highly uncertain; coupled with the expiry of safeguard measures in the largest world markets for clothing Kenya and other developing countries are expected to face stiff competition in global markets.

Nordås (2005) estimates the impact of MFA phase-out on employment. He observes that most studies using the general equilibrium models to examine the impact of MFA termination assume full employment before and after quota phase-out. He finds that job losses in unskilled labour-intensive clothing industries are inevitable in low income

countries. Retrenched workers opportunities to *get alternative* jobs in these countries are slim.

He finds that the price squeeze evident in the post- MFA period has compelled producers to restructure production costs through casualisation of labour. In the job losses context in low income countries his study suggests that the rules of origin in the leading world markets should be loosened considerably and at the very least cumulation should be allowed to enable sustainability of the garment industry (Nordás, 2005: 47). Better education and training is necessary for creation of decent jobs in the clothing industry.

### **3.8 Summary of the Relevant Studies in Kenya's Garment Industry**

The first comprehensive study applying value chain analysis in Kenyan garment industry is by McCormick (2001). It developed a chain map by using data from 22 medium and large garment and textile manufacturing firms. Five chains were developed of which two involved exporting while the other three focused on different segments of the domestic market. The study found that the governance structures and upgrading potential for these different value chains differed. Our study is built on this model but differs in two ways: while McCormick, (2001) focuses on both the textile and clothing garment firms. Secondly, our study is based garment industry only. Finally, this study covers the post-MFA period an important structural change in the industry.

Kinyanjui and McCormick (2003) developed value chains for small-scale garment industries in Nairobi with a view to examining how firms were adjusting to structural trade liberalisation era. The study utilised survey data for 1989 and 2000 representing pre and post trade liberalisation period. The findings are that garment industry had been severely affected particularly through the influx of second-hand clothes and collapse of most textile manufacturing firms.

Small-scale garment firms were resilient and adjusting in two main ways to remain afloat: (1) producing relative high value products (2) increasing volume of production. Although my study concentrates on medium large scale garment manufacturing firms to

Compare upgrading potentials between the domestic and global value chains, the knowledge of how firms are adjusting within their respective value chains is crucial.

Kinyanjui *et al.* (2004) examine the trends and current situation of the clothing and footwear industries in Kenya. They find that the growth of these two labour-intensive industries was triggered by the ISI adopted by the government at independence in 1963. The shift towards export-oriented industrialisation policy in mid-1980s reversed most of the growth that had been realised during the previous trade regime. While the clothing industry seemed to recuperate following the AGOA enactment and EPZ creation, the textile segment industry has not shown any significant signs of recovery.

Fukunishi *et al.* (2006) carried out a comparative study between the garment industry in Kenya and Bangladesh with a view to demonstrating how labour-intensive industries promote employment creation and poverty reduction among the developing countries. The findings of this study are that employment in the Kenyan garment industry rose steadily following the AGOA enactment in 2001.

The female workers proportion in the Kenyan industry is much lower than in Bangladeshi. The total factor productivity measurements indicated that Kenya lags behind Bangladesh. This is attributed to the Kenyan garment industry incipient while Bangladeshi is advanced. While the fieldwork for this study was conducted in 2003 during the height days of AGOA and prior to the removal of quota regime, my study follows a similar approach but adopts value chain analysis and technical efficiency. A study by Kindiki (2006) assesses export competitiveness of Kenyan apparel firms operating in the EPZ particularly following the MFA termination in 2005. The author argues that the gross export by EPZ firms had not been severely affected by the MFA termination thanks to the derogation of AGOA's rules of origin. He further finds out that the process, product and functional upgrading were minimal at best, because the industry specialised in standardised products.

Ferrand (1998) in his PhD thesis titled "Discontinuity in Development: Kenya's Middle-scale Manufacturing Industry" adopted the case study research method to examine factors

responsible for lack of vibrant medium scale enterprises in the garment industry. His study concludes that institutional and regulatory frameworks impede growth of garment firms from the small scale to medium scale levels. Due to these impediments, small scale garment firms have a tendency to remain small.

Ikiara and Ndirangu (2004) found that AGOA is a good intervention for the sub-Saharan Africa because of its potential to building supply capacity and competitiveness required to integrate the continent into the global economy. Omolo (2006) concurs with Ikiara and Ndirangu (2004) that the industry is particularly important for the poverty reduction strategy in Kenya. The institutions role and the state in revitalising the crumbling textile segment of the industry is particularly emphasised (Ikiara and Ndirangu, 2004:259). A major recommendation is for the SSA countries to explore regional strategic approach in strengthening competitiveness with the region.

McCormick *et al.* (2006) and Kindiki (2006) demonstrate that the immediate impact of MFA termination was minimal Kenyan case perhaps because most of the exporting firms were foreign firms subsidiaries based in the Asian countries. The AGOA preferential market access seems to have cushioned the Kenyan industry against the predictions by among others Naumann (2005); Nordås (2004); Kathurina *et al.* (2001) and Bagchi (2001).

Between 2004 and 2007, Kenya's apparel AGOA exports declined by less than 10 per cent, compared to its regional competitors where the decline ranged between 16 and 58 per cent. Phelps *et al.* (2009) examine the local economic development impacts associated with the recent AGOA-prompted re-birth of the clothing industry in Kenya. Phelps *et al.* (2009) in line with McCormick *et al.* (2006), find that nearly all garment exporting firms were established after the enactment of AGOA in 2001 and were largely foreign owned implying that AGOA provided investment and export opportunities (Phelps *et al.* 2008). Factories were generally big but a majority of workers were involved in direct production. The few white collar jobs were reserved for expatriate workers from the MNE parent home country (Phelps *et al.* 2009: 318).

In the context of buyer-driven global value chains, Phelps *et al.* (2009) shows that considerable direct employment has been created in the Kenyan clothing industry as a result of AGOA. The indirect economic development effects have been limited, particularly in the technological and managerial capacity of Kenyan-based FDI which appears to reflect the ownership characteristics of the parent companies and the distance of the customers concerned.

There are also obstacles to the deepening of backward integration with now moribund cotton textiles industry (Phelps, 2008; McCormick *et al.* 2006). The firm's ownership structure does matter in terms of economic development impacts of FDI through which SSA countries are becoming incorporated into global value chains. The long term sustainability of the clothing industry in Kenya is questionable.

### **3.9 Research Gaps and the Contributions of My Studies**

We have reviewed the theoretical and empirical literature. Theoretical approach is informed by theories such as value chain analysis, technical efficiency, firm, institutional economics and business systems theories. By reviewing these theories, we have managed to develop a clear linkage of how these different theories can be integrated to enhance our understanding of global garment trade. Understanding the trade structure, the estimation of the technical efficiency using stochastic production frontier is timely as it helps us to identify areas of intervention in promoting garment production activities in Kenya.

The estimation of the technical efficiency in the garment industry has not been conducted before (existing studies look at the entire manufacturing sector). By focusing on the garment industry alone, this study is able to provide the precise analysis of the industry which has unique differences to other industries in the manufacturing sector. By identifying factors that determine technical efficiency in the Kenya's garment manufacturing industry, practical policy interventions are recommended.

The phase-out of the MFA on 1<sup>st</sup> January 2005 has significantly altered the trade rules in the clothing industry as global competition has intensified. Sourcing and apparel supply

structure have also changed significantly affecting developing countries like Kenya. Empirical literature based on value chains has demonstrated that the chain type governance promotes or impedes upgrading by local producers. Based on evidence from large developing economies, the firms inserted in multiple value chains demonstrate higher opportunities for upgrading using experience gained in the domestic market than those inserted global value chains.

Such conclusive evidence is lacking in the case of small developing countries such as Kenya. Existing studies on garment industries in SSA tend to be inclined towards GVC. By the use of value chain analysis, we examine the possibilities for local firms inserted in less hierarchical value chains to upgrade for the Kenyan firms inserted in different value chains.

In the literature review, it has been shown that there is a strong linkage between upgrading and technical efficiency. Literature on value chain analysis depicts that insertion in GVC enhances firms' opportunities to upgrade and that local firms should strive to participate in GVC through exporting. Technical efficiency literature indicates that exporting firms tend to be more efficient than non-exporting ones. These two approaches appear to support the learning-by-exporting hypothesis, which has not been tested in the case of garment export in Kenya.

Three issues emerge from the review of empirical literature on value chains and upgrading. In GVCs with their hierarchical relations, producers tend to experience process and product upgrading; global buyers may support the activities leading to these two types of upgrading. Buyers may block any efforts by producers that result in functional upgrading because this encroaches on their core competence. In chains governed by market relationships, producers experience neither support for, nor blockages to upgrade.

Advances in functional upgrading seem to be facilitated by dealing with smaller rather than large customers. Literature seems to suggest that producers in multiple chains appear to experience all the three types of upgrading. A comparison of upgrading patterns

Between the global and domestic value chains has not been conducted in Kenya and African clothing industry, hence the justification of my study.

## CHAPTER 4

### CONCEPTUAL FRAMEWORK

#### 4.1 Introduction

Conceptual framework in a scientific inquiry is a summary of behaviour as well as an explanation and prediction of empirical observations. Much of what is considered theory in the social sciences consists of frameworks, which can be used to direct systematic empirical research. However, the propositions derived from conceptual frameworks are not established deductively (Neuman 2006, Creswell 2003, Frankfort-Nachmias and Nachmias 1996). In a conceptual framework, descriptive categories are systematically placed in a broad structure of explicit propositions, statements, or relationships between two or more empirical properties to be tested (Neumann, 2006). In addition, descriptive categories are systematically placed in a structure to provide explanations and predictions for empirical observations.

The core issue in our study is the proposition that garment manufacturing firms in Kenya which operate in global garment value chains experience enhanced upgrading and technical efficiency. Based on the theoretical issues reviewed in Chapter Three, this chapter presents conceptual and analytical frameworks for synthesizing the main propositions of this study.

#### 4.2 Conceptual Framework

In this study, a framework centred on the value chain analysis and drawing from institutional economics and technical efficiency theories is developed (Figure 4.1). The ultimate goal was to develop a linkage that graphically demonstrates how firms operating in different value chains are likely to experience upgrading. This linkage by extension facilitated in our methodology and data analysis. Therefore, this framework attempts to integrate the main theories reviewed in section 3.2. From section 3.3 on technical efficiency, an analytical framework was developed to estimate technical efficiency in the industry.

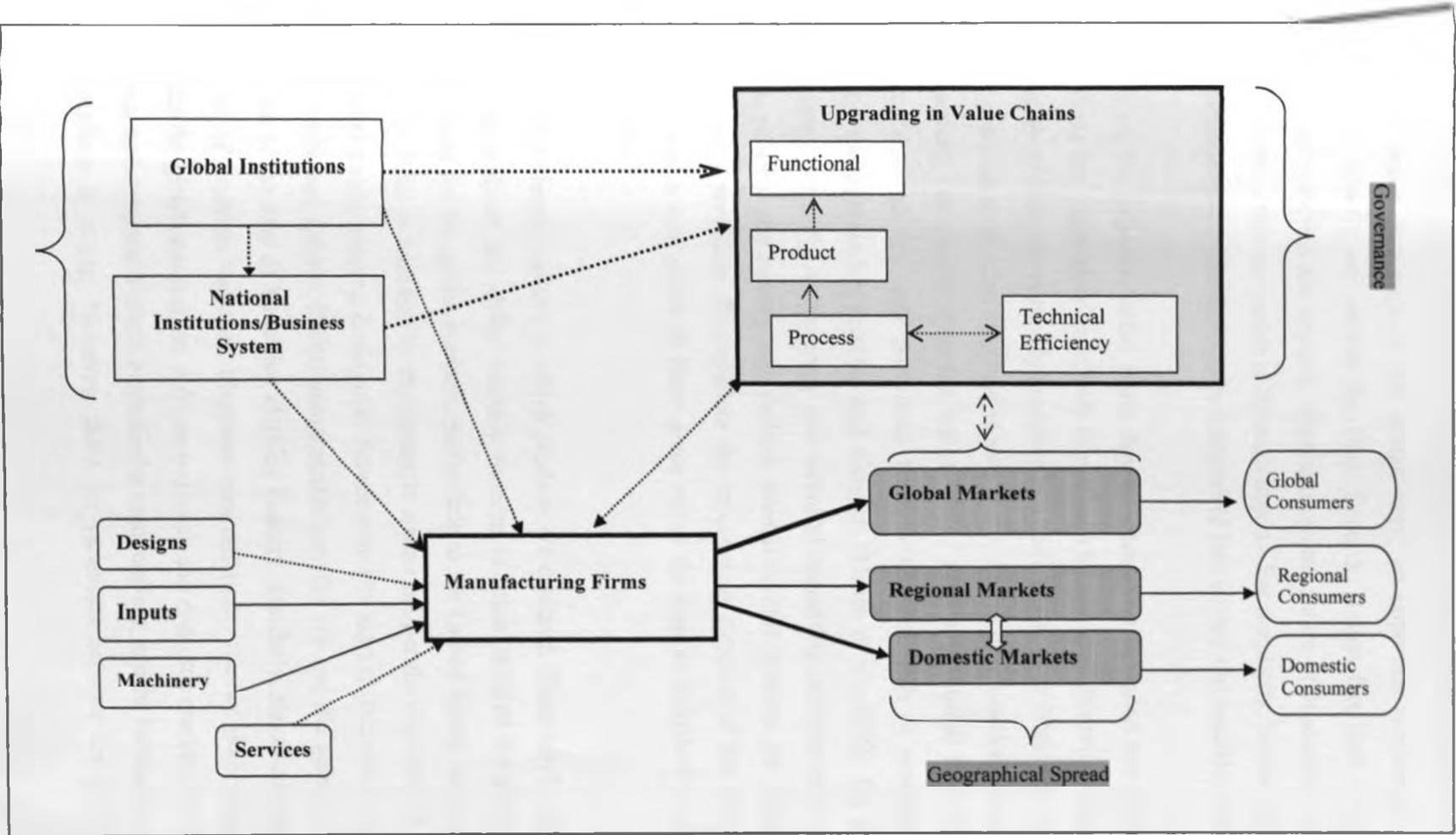


Figure 4.1: Theoretical Framework: Upgrading and Technical Efficiency in Garment Value Chains  
 Source: Author's Conceptualisation

Key: \_\_\_\_\_ flow of goods                      - - - - - : flow of information

The base of this framework presents the structure of a garment value chain. To start with garments are designed, an activity which could be undertaken from within or outside the firm. We argue that most of the design work, an important component of garment production, takes place outside the firm. Once the design has been agreed upon by parties, raw materials are sourced. Depending on the nature of production, inputs can be sourced in the domestic market or through imports. For simplicity, labour is also included as a component of inputs and can be categorised into skilled and unskilled labour.

In Kenya, the export-oriented firms depend entirely on imported raw materials while local firms use a combination of both imports and locally available raw materials, with an inclination towards domestically produced raw materials such as fabric and yarn. Another major component of input structure is machinery. As discussed earlier, machines used in this industry are mainly imported but a few of them are sourced from the domestic market. The industry also uses local business services such as management skills, auditing and accounting, banking and transport (Phelps *et al.*, 2009). On the technical side, firms outsource engineering and technical consulting services such as structural layout, process engineering and various internal control systems for efficiency, from locally-based providers. To complete the input-output structure of the value chain, the actual production of garments takes place within the firm as described in our review of firm theory.

There are different markets to which products are destined. These can be classified into domestic, regional and global markets. In terms of value, most of the garment products are destined for the global markets, particularly to the United States, under the auspices of AGOA. This is followed by the domestic market (as per the thickness of the line). In the global chain, one can distinguish between the US market (including Canadian) and the EU markets. Gibbon (2000) demonstrates how the US and EU garment markets are different in the case of Mauritius clothing industry. Similarly, Navas-Alemán (2006), in the case of Brazilian footwear, illustrates how differently the two main markets operate. Besides the global markets, are African (regional) and domestic markets. Incidentally, the regional and domestic markets have similar requirements; and the interaction between the two markets is strong. However, there are variations between the global and other

markets that Kenyan garment products are sold. In general, the market destinations could be equated to the geographical spread of the value chain (Gereffi and Memedovic, 2003). Moreover, in each market, the structure of chain governance is different.

Next is a look at the nature of governance in different garment value chains. It is observed here that this chain being buyer-driven, buyers are undoubtedly key agents in regulating chains, and they exercise power on what is to be produced and by whom (Schmitz and Knorringa, 2000; Gereffi, 1999, 1994). This in turn affects upgrading potential of the firms. The nature of the market that a firm serves therefore influences the possibilities of upgrading path (see for example Kinyanjui and McCormick, 2003; McCormick, 2001). Another set of key players in the governance structure are the institutions, which are broadly classified as either global or national. Their influence is through regulation of economic, social, and political environment in which firms operate. Gereffi, Humphrey and Sturgeon (2005) observe that *"trade rules have an important impact on global value chain governance in the apparel industry.... the MFA fuelled the spread of global production networks and also prompted the rise of value-chain intermediaries. Moreover, global-scale regulations, the 'rules of the game' have profound effect on the shape and direction of change in GVC"*. The impact of these institutions can be either direct to the industry, or through the markets. This has an impact on upgrading of local firms within the value chain.

A firm can experience any of the three forms of upgrading, namely; process, product and/or functional upgrading. As mentioned in Chapter Three, literature suggests that upgrading path ordinarily starts with process, followed by product, and finally functional upgrading (Bair and Gereffi, 2001; Kaplinsky and Morris, 2002). There is a close connection between upgrading and technical efficiency whereby those firms that upgrade tend to be more efficient than those which do not. As it were, technical efficiency influences the input-output structure of the chain. Essentially, technical efficiency relates to how close production output by a firm is to the production possibility curve. For example, if a firm invests in computer-aided-design (CAD) or in a modern cutting machine so that fabrics are cut in a big stack to save on time, this constitutes process

upgrading. At the same time, by saving time and reducing wastage, a firm would be enhancing its technical efficiency.

### 4.3 Analytical Framework: Technical Efficiency

We now turn to the development of an analytical framework for analysing technical efficiency. We start by restating the framework presented in Chapter Three and then describe an empirical model for estimation.

#### 4.3.1 Modelling of Technical Efficiency

In Chapter Three, a general framework for analyzing technical efficiency was developed [Equation (3.5) and Equation (3.6)], which are re-stated here as:

$$\ln y_i = \beta_0 + \sum_{j=1}^J \beta_j \ln x_{ji} + \frac{1}{2} \sum_{j=1}^J \sum_{k=1}^J \beta_{jk} \ln x_{ji} \ln x_{ki} + v_i - u_i \quad (4.1)$$

$$\beta_{jk} = \beta_{kj(k \neq j)}$$

Equation 4.1 can be rewritten to reflect conditions of our study as follows:

$$\ln y_i = \beta_0 + \beta_1 \ln x_{1i} + \beta_2 \ln x_{2i} + \frac{1}{2} (\beta_{11} (\ln x_{1i})^2 + \beta_{22} (\ln x_{2i})^2) + \beta_{12} \ln x_{1i} * \ln x_{2i} + v_i - u_i \quad (4.2)$$

where,  $j = 1, 2, \dots, j$  represents various inputs,  $\ln y_i$  represents the natural logarithm of the value of the output of the  $i^{\text{th}}$  firm, while  $\ln X_{ji}$  represents the natural logarithm of  $J$  production inputs of the  $i^{\text{th}}$  firm,  $\beta_j$  is a vector of parameters to be estimated, and  $i$  represents the  $i^{\text{th}}$  firm in a sample of  $N$  firms included in the study.

Equation 4.2 is a “non-linear form of the translog model which requires that the regularity conditions of the production, notably monotonicity and convex isoquants be tested at each data point” (Ngui 2008 p. 34; Bigsten et al. 2004:117). In our study,  $J=2$  represents capital ( $x_1$ ) and labour ( $x_2$ ). The terms ‘ $v_i$ ’ and ‘ $u_i$ ’ vary across firms and

represent random and inefficient effects as earlier defined (in section 3.3.2). The term  $\beta_{jk} = \beta_{kj}$  is a symmetry imposed to maintain consistency of the Young's theorem of integrable functions (Chiang, 1984:315). The  $\beta_0$ ,  $\beta_j$ , and  $\beta_{jk}$  are the unknown parameters to be estimated. Equation (4.2) derived from equation was estimated for the garment industry using firm level cross sectional data for 2006.

Söderbom and Teal, (2004:373) suggest a number of restrictions that can be tested from the equation (4.2). These include:<sup>50</sup>

$$\left[ \begin{array}{l} \sum_{j=1}^J \beta_{jk} = 0 \quad k = 1, \dots, J \\ \sum_{j=1}^J \beta_j = 1 \end{array} \right] \quad \text{(Constant returns to scale)} \quad (4.3)$$

$$\beta_{jk} = 0, \quad j = 1, \dots, K; k = 1, \dots, J \quad \text{(Cobb-Douglas form)} \quad (4.3)$$

We follow the work of Caudill, et al. (1995 p. 107) based on Aigner, et al. (1977) to model explanatory variables in a technical efficiency function ( $\sigma_{ui}$ ).

$$\sigma_{ui} = \exp(z_i, \delta) \quad (4.4)$$

where  $\delta$  is a vector of unknown parameters assumed to include an intercept term and  $z_i$  is a vector of observable explanatory variables related to characteristics of firm and assumed to affect firm's technical efficiency (Coelli *et al.*, 2005; Lundvall and Battese, 2000; Chirwa, 2007). In this study, variables related to firm characteristics include firm age, firm size, and managers' skills expressed in natural logarithm, and export as well as spillover both of which are expressed in percentages. Literature suggests that garment firms may need time to acquire marketing strategies, distribution channels and linkages with lead buyers before they can penetrate export markets (Kimuyu 1999, McCormick

<sup>50</sup> Cobb-Douglas production function is a restricted form of Translog production function, in which the interactive term  $\sum \beta_{jk} \ln x_j x_k$  is equated to zero (Coelli, et al. 1998:210). It has constant return to scale such that the sum of elasticities of substitution is equal to one (Chiang, 1984).

2001). For this reason one could expect that there is a positive relationship between firm age on the one hand and upgrading and technical efficiency on the other. In contrast, older firms have been observed to cling on older technology and old management styles such that they in fact become more inefficient and less likely to upgrade with age. This may be true in the case of garment industry where production technology and management strategies change rapidly. As a result, one would again expect younger firms which embrace modern technology and management styles to upgrade and become more efficient (Bigsten, *et al.* 2004).

Equation (4.4) can be re-written as:

$$\sigma_{u_i} = \exp\left(\delta_0 + \sum_{q=1}^Q \delta_q z_{qi}\right) \quad (4.5)$$

-where  $q = 1 \dots Q$  represents the technical efficiency explanatory variables. The standard deviation of the two-sided error is also written in an exponential form such that:

$$\sigma_v = \exp(\theta) \quad (4.6)$$

From equation 4.5, we can test a number of hypotheses to validate our estimation procedure. One of them is that all the observable explanatory variables are insignificant in explaining the differences in technical efficiency across the firms, which is expressed by equating these variables to zero (Coelli, *et al.*, 2003). That is,  $\delta_1 = \dots = \delta_q = 0$ , implying that there are no inefficiency effects in the model. This hypothesis is tested using the Wald Statistic as demonstrated by Coelli *et al.* (1998:190).

The specification of the stochastic production frontier model in equation 4.2, the technical efficiency of the  $i^{\text{th}}$  firm is defined by Battese and Broca (1997) and Aigner *et al.* (1977) and given as:

$$TE_i = \frac{f(x_i, \beta) \exp(v_i - u_i)}{f(x_i, \beta) \exp(v_i)} = \exp(-u_i) \quad (4.7)$$

The TE estimated lies between zero and one ( $0 \leq TE_i \leq 1$ ), in which case, 1 indicates full efficiency while 0 indicates full inefficiency (see Ngui, 2008). By the same argument, Aigner *et al.* (1977:27) derive the log-linear likelihood function of the model defined by equation 4.2, in which the  $u_i$  are assumed to be independent and identically distributed truncated (at zero) of a  $N^+(0, \sigma_v^2)$ . Further, the likelihood is expressed in terms of the two variance parameters,  $\sigma_s^2 \equiv \sigma_v^2 + \sigma_{ui}^2$  and  $[\lambda \equiv \sigma_v / \sigma_v]$  (Coelli *et al.* 1988). It is argued the parameter  $\gamma \equiv \sigma_v^2 / \sigma_s^2$ , is a better proxy for estimating efficiency because it has a value between zero and one, whereas the  $\lambda$ - parameter could be any non-negative value. In practice, a value of  $\gamma = 0$  indicates that the deviations from the frontier are entirely due to noise, while a value of  $\gamma=1$  would indicate that all deviations are due to technical inefficiency (Battese and Coelli, 1995). Equation 4.7 involves the technical inefficiency effects  $u_i$  which are unobservable. Given that only the composed error term can be observed and estimated whereby  $\varepsilon_i = v_i - u_i$ , then  $TE_i$  is predicted by conditional distribution of  $u_i$  given the estimated value of  $\varepsilon_i$  that is  $E(u_i / \varepsilon_i)^{51}$ .

However, the conditional distribution of  $u_i / \varepsilon_i$  due to Jondrow *et al.* (1982) is the truncation at zero of the normal distribution with mean ( $\mu_i^*$ ) and variance ( $\delta_i^2$ ) where:

$$\mu_i^* = \frac{-\varepsilon_i \sigma_{ui}^2}{\sigma_{ui}^2 + \sigma_v^2} \quad \text{and} \quad \delta_i^2 = \frac{\sigma_v^2 \sigma_{ui}^2}{\sigma_{ui}^2 + \sigma_v^2} \quad (4.8)$$

Borrowing from Battese and Coelli (1995 p. 329), and Ngui, (2008) technical efficiency (TE) point estimates for a logarithmic output of the  $i^{\text{th}}$  firm is given as:

$$TE_i = E[\exp(-u_i) | \varepsilon_i] = \left[ \frac{1 - F(\sigma_A + \gamma \varepsilon_i / \sigma_A)}{1 - F(\gamma \varepsilon_i / \sigma_A)} \right] \exp(\gamma \varepsilon_i + \sigma_A^2 / 2) \quad (4.9)$$

where  $\sigma_A = \sqrt{\gamma(1-\gamma)}\sigma_s^2$ ,  $\varepsilon = \ln(Y_i) - X_i \beta$ ; and  $\Phi(\cdot)$  is the density function of a standard normal distribution function.<sup>52</sup>

<sup>51</sup> For further details, see Ngui, 2008; Mengistae, 1995; Coelli *et al.* 1998.

<sup>52</sup> For a detailed discussion on the prediction of firm-level technical efficiencies, see Coelli *et al.* (1998: 190).

The maximum likelihood (ML) estimator for the mean technical efficiency is obtained by substituting the ML estimators with relevant parameters in equation (4.9). Alternatively, the measurement of the firm-level inefficiency requires the estimation of non-negative disturbance term  $u_i$  (Coelli et al 1998 p. 189). From equation (4.9) technical efficiency of the  $i^{\text{th}}$  firm is defined by  $TE_i = \exp(-u_i)$ . This involves the technical inefficiency effect  $u_i$ , which is unobservable. Even if the true value of the parameter vector,  $\beta$ , in the stochastic frontier model (4.2) was known, "only the difference  $\varepsilon_i \equiv v_i - u_i$  could be observed. Therefore, 'the best predictor for ' $u_i$ ' is the conditional expectation of ' $u_i$ ' given the value of  $v_i - u_i$ ' (Coelli *et al.* 1998:190). Given the assumptions on the distribution of  $v_i$  and  $u_i$ , Jondrow *et al.* (1982) suggest that we first derive the conditional mean of  $u_i$  given  $\varepsilon_i$ . Battese and Coelli (1995) similarly derive the best predictor of the technical efficiency of  $i^{\text{th}}$  firm as defined in equation (4.9).

Following the works of Ngui, (2008:35 ff) and Caudill, et al. (1995:106 ff), the estimation of the unknown parameters  $\beta$ ,  $\delta$ , and  $\theta$  was carried out by maximum likelihood estimation using the computer program Oxmetrics, written by Brümmer (2001). Along with the unknown parameters, Oxmetrics also predicts the technical efficiencies for the firms in the years which they were observed, and estimates the following variance parameters in terms of:

$$\gamma = \frac{\sigma_u^2}{\sigma_u^2 + \sigma_v^2} \quad \text{and} \quad \frac{\text{Variance}(u_i)}{\text{Variance}(\varepsilon_i)} = \frac{((\pi - 2)/\pi)\sigma_u^2}{((\pi - 2)/\pi)\sigma_u^2 + \sigma_v^2} \quad (4.10)$$

where  $\gamma$  is a parameter that has possible values between zero and one. If  $\gamma = 0$ , it implies that  $\sigma_u^2 = 0$  which means that the technical inefficiency effects are not stochastic, hence the stochastic production frontier function is not a good specification of the model (Coelli *et al.* 1998).

### 4.3.3 Estimation of Elasticities

Based on equation (4.2), the logarithmic partial elasticity of output with respect to each input ( $E_j$ ) is specified as:

$$E_j = \frac{\partial \ln y_i}{\partial \ln x_j} = \beta_j + \beta_{jj} \ln x_{jj} + \sum_{j \neq k} \beta_{jk} \ln x_{kk} \quad (4.11)$$

The elasticities in equation 4.11 are functions of inputs which imply that the value of elasticity varies for different input values (Coelli et al. 1998, Coelli et al. 2005). Returns to scale are calculated from the sum of all partial input elasticities.

### 4.3.4 Likelihood Ratio Test

Next is a consideration of various tests of hypotheses, which are cases of nested hypotheses for which the null hypothesis is a subset of that of the null hypothesis. "Thus, under the null hypothesis, the model involved is a restriction of the more general model that applies under the alternative hypothesis. The restrictions on the parameters of the stochastic production frontier model can be tested using the generalized likelihood ratio (LR) test statistic, which has approximately a chi-square distribution ( $\chi^2_{(n)}$ ) with degrees of freedom equal to the number of parameters (n) involved in the null hypothesis ( $H_0$ )" (Ngu, 2008:38; Coelli, *et al.* 1998:191). Thus, the test statistic is calculated as:

$$LR = -2[\ln(l(H_0)) - \ln(l(H_1))] \approx \chi^2_{(n)} \quad (4.12)$$

where  $l(H_0)$  is the likelihood function value for the frontier model in which the parameter restrictions that are stated by the appropriate null hypothesis are imposed, and  $l(H_1)$  is the likelihood function value for the more general and unrestricted frontier model. Following Coelli, (1995:252), if  $\gamma = 0$ , then the one-sided LR test is asymptotically distributed as a mixture of chi-square distributions rather than a single chi-square distribution.

### 4.3.5 Estimation of Returns to Scale

Returns to Scale (RTS) were calculated from the sum of all the partial input elasticities, expressed as:

$$RTS = \frac{\sum_{j=1}^J \partial \ln y_t}{\partial \ln x_j} = \sum_{j=1}^J E_j = \sum_{j=1}^J \beta_j \quad (4.13)$$

To evaluate the effects of technical efficiency explanatory variables ( $z_t$ ) on technical efficiency, from equation 4.5, the elasticity of technical inefficiency with respect to each explanatory variable were expressed as:

$$\partial_q = \frac{\partial \ln(u_t)}{\partial \ln z_q} \quad (4.14)$$

A negative coefficient means that an increase in that variable decreases mean inefficiency and vice versa (Coelli, *et al.*, 1998).

### 4.3.6 Confidence Intervals

A possible weakness of most efficiency studies has been the lack of application of statistical inference techniques to the point estimates are derived. In the stochastic frontier literature, the possibility of conducting inference, although noted, has been infrequently implemented (Coelli *et al.*, 2003). In fact, some of the exceptions to this are Horrace and Schmidt (1996), Battese *et al.* (2000), Fraser and Horrace (2003) and Ngui (2008). The construction of confidence intervals on point estimates of technical efficiency differs on the basis of assumptions that one is willing to impose on the model. With strong parametric assumptions on the distribution of technical efficiency, confidence intervals follows a straight-forward, although non-standard way (Battese and Coelli, 1998). On the other hand, with no distributional assumptions on the technical efficiency, Schmidt and Horrace (1996) introduce a fixed-effect frontier specification and point estimates are based on the difference of maximal value of fixed-effects (the frontier) and other effects in the sample. In addition, Horrace and Schmidt (1996) suggest

construction of joint confidence intervals for all differences from the unknown maximal fixed-effect and other effects. Therefore, drawing from Horrace and Schmidt (1996), the  $(1-\alpha) \times 100\%$  confidence intervals for technical efficiency ( $TE_i$ ) can be calculated as:

$$\exp(-\mu_i^* - Z_i^L \sigma_i^*) \leq TE_i \leq \exp(-\mu_i^* - Z_i^U \sigma_i^*) \quad (4.15)$$

where  $Z_i^L$  and  $Z_i^U$  are the lower and upper limits of the  $(1-\alpha) \times 100$  confidence intervals of a standard normal distribution respectively given as<sup>53</sup>:

$$Z_i^L = \Phi^{-1} \left\{ \left[ 1 - \frac{\alpha}{2} \right] \left[ 1 - \Phi \left( -\frac{\mu_i^*}{\sigma_i^*} \right) \right] \right\} \quad (4.16)$$

and

$$Z_i^U = \Phi^{-1} \left\{ \left[ 1 - \frac{\alpha}{2} \right] \left[ 1 - \Phi \left( -\frac{\mu_i^*}{\sigma_i^*} \right) \right] \right\} \quad (4.17)$$

Using a one-stage simultaneous estimation procedure as suggested by Caudill *et al.* (1995), Battese and Coelli (1995), inefficiency effects and all other parameters were estimated using the maximum likelihood procedure. Definitions of variables used in the empirical estimation are provided in Chapter 5 (Methodology).

#### 4.4 Conceptual Propositions and Hypotheses

The overall goal of this study as stated in Chapter One was to compare how participation in global or other value chains influences upgrading and technical efficiency of firms in Kenya. In this regard, there were four main hypotheses that this study sought to test:

- 1) Firms participating in global value chains are more likely to experience process upgrading than in other chains with similar characteristics. In other words, firms inserted in different value chains experience different process upgrading.

<sup>53</sup> Where  $\Phi$  is the standard normal distribution; and all other variables are as described earlier in the text.

- 2) Firms participating in global value chains are more likely to experience product upgrading than in other chains with similar characteristics. Do firms in different value chains experience different potentials for product upgrading?
- 3) Firms that operate in a global value chain are more likely to experience functional upgrading than firms with similar characteristics operating in other chains. In other words, functional upgrading is pegged on insertion in GVCs.
- 4) Participation in global value chains enhances technical efficiency of garment firms.

Having presented both the conceptual and analytical frameworks, we now turn to methodological issues in the next chapter.

## **CHAPTER 5**

### **METHODOLOGY**

#### **5.1 Introduction**

In this chapter, we outline the research design and methodology adopted for this study. Drawing from theoretical literature and conceptual framework outlined in Chapters three and four, this chapter discusses in detail the methodology and the research design applied in our study. The research design which deals with issues of data collection process, and operationalisation of key variables, helps to bridge the introductory chapters with the analysis chapters.

#### **5.2 Research Methodology and Design**

In the philosophy of science we can distinguish between epistemology and methodology of as means of acquiring new knowledge. Epistemology is the philosophy of knowledge or of how we come to know (Creswell, 2003). Methodology on the other hand is concerned with how we come to know, but in a much more practical way. Methodology is focused on the specific ways –the methods- that we use to understand the phenomenon under investigation. Epistemology and methodology are intimately related: the former involving the philosophy of how we come to know the world and the latter involving the practice. Methodology describes the general approach followed in conducting a research study and it provides a link between the research problem, objectives, questions and hypothesis on one hand, and the findings on the other (Tashakkori and Teddlie, 1998; Kolhbacher, 2006; Berg, 1998).

Research design can be thought of as the structure of research – it is the 'glue' that that holds a study together; by showing major parts of a study and how they are interlinked in trying to address the central research question. A research design is defined as an argument for the logical steps which are taken to link the research question(s) and data collection, analysis and interpretation of results in a coherent way.

The basis of adopting a particular methodology lies in the researcher's philosophical discourse and the research questions being investigated. There are competing approaches in social science research based on different philosophical assumptions about the purpose of science and the nature of social reality.

Methodology is rooted in the philosophy of knowledge which can be classified as '*positivism*' or '*post-positivism*'.<sup>54</sup> Positivists insist on quantification in science and argue that the newer social sciences could only hope to emulate the theoretical and especially predictive success of the natural science such as physics and chemistry by adopting the same methods (Glaser and Strauss 1967). In this discourse, scientific maturity is commonly believed to emerge as the degree of quantification found within a given field increases. Post-positivism is not a slight adjustment to or revision of positivism position, but rather a rejection of central tenets of positivism. Post-positivists reject the idea that any individual can see the world perfectly as it really is as we are all biased and all our observations are affected (theory-laden) (see, Creswell 2003; Berg, 1998; Frankfort-Nachmias and Nachmias, 1996).

### **5.3 Research Design in our Study**

Our study utilised a mixed research methodology that combines elements of deductive and inductive methods. There is a strong belief among social science researchers that studies which combine elements of the two approaches are more skilful than those that employ one type of methodology (Silverman, 2005; Neuman, 2006; Yin, 1994). The adoption of mixed method research approach was informed by the nature of the research problem under investigation. The need to understand governance and industrial upgrading calls for a detailed analysis of issues which is inclined towards qualitative approach. McCormick and Schmitz (2002) acknowledged that value chain research is quite descriptive in nature, hence requiring mostly qualitative data. The estimation of technical efficiency required the use of quantitative data to describe relationships.

---

<sup>54</sup> See [www.socialresearchmethods.net/kb/positivism.php](http://www.socialresearchmethods.net/kb/positivism.php) last accessed on 5 July 2009.

### 5.3.1 Selection of Study Area

The fieldwork for this study was conducted in Nairobi and Mombasa where most of the large-scale garment production activities took place. In 'Nairobi' the fieldwork extended to the neighbouring towns of Athi-River (where most of the EPZ firms are located), Kikuyu and Thika, which have pockets of garment factories. In Mombasa, the fieldwork extended to Voi Town where one of the EPZ garment firms is located.

The selection of these study areas was informed by a number of factors:

- i. All the garments EPZ manufacturing firms are located in Nairobi, Athi-River, and Mombasa areas. Given the fact the EPZ firms are key players in the global garment market in Kenya the study had to focus in these regions.
- ii. Previous studies on the textiles and clothing notably Bigsten and Kimuyu (2002) and Fukunishi *et al.* (2006) conducted in five main towns in Kenya (Nairobi, Mombasa, Kisumu, Nakuru and Eldoret) had found that 90 per cent of medium and large scale firms were clustered around Nairobi and Mombasa.<sup>55</sup>
- iii. The list of garment manufacturing firms from the Ministry of Trade & Industry, Kenya Investment Authority, Kenya Association of Manufacturers, and Kenyan National Bureau of Statistics' were used to find the existence of firms. It is worth mentioning that the KNBS master plan is not updated regularly and therefore was highly undependable prompting us to seek information from other sources.
- iv. Our effort to contact some of the firms which were registered in other towns besides Nairobi and Mombasa was not fruitful as contact details given unreachable. Our further probing and physical enquiry, it was established that most these firms had closed down many years back and some had never begun operation in the premises where they were registered.

For these reasons, our field survey was conducted in the Nairobi and Mombasa regions. Nairobi is the capital city in Kenya, whereas Mombasa is the not only the second largest

---

<sup>55</sup> Only one large-scale garment manufacturing firm was in operation in Nakuru (Bedi Investments Ltd) and had been included in the sample framework. Although, the firm was not included in the survey, the MD was one of our key informants and provided useful information about his firm.

city, but also a coastal town where the only national port is located. These two cities have several advantages such as infrastructures and international connections which undeniably are major factors in selecting the location of garment factories.

### 5.3.2 Study Population and Sample

Informed by the nature of research problem that this study was set investigate, the objective was to gather information from firms in the formal sector as opposed to those in the informal. The aim was to identify firms in the medium- and large-scale category whose potential for participating in the export markets was high. This study excluded micro and small scale garment enterprises. The other reason for excluding micro and small firms was that there were a number of studies already on micro and small garment firms based on value chains (McCormick, 2001; Kinyanjui & McCormick 2003; Bigsten, *et al.*, 2004). Using the number of workers as a benchmark for a firm size and, drawing from RPED studies notably Aguilar and Bigsten (2002:33 ff) firms were classified as shown in Table 5.1. Our study population constituted garment manufacturing firms with at least 20 workers. Employment data for this study was based on a holistic definition such that it included permanent and casuals, paid and unpaid workers. There was also an attempt to confirm the number by classifying workers on the basis of the work that they were involved in within the firm (Kothari, 2003).

**Table 5.1: Classification of Firm Sizes in the Garment Industry**

Size	Number of Workers (Employees)
Microenterprises	1 - 5
Small-scale enterprises	6 - 19
Medium-scale enterprises	20 - 75
Large-scale enterprises	76 - 500
Very large	501 and over

Source: Aguilar and Bigsten (2002), Kimuyu (1999) Ikiara et al. (2002)

The number of garment firms in the medium and large-scale category has been on a declining trend largely due to increased competition in both the domestic and export markets. As such, instead of basing our study on a sample, we conducted a census of all

existing firms. There was therefore no sampling procedure applied (Kothari, 2003; Neuman, 2006). In our study, the term population referred to all firms engaged in garment production as presented in Table 5.1. Of this we selected a cluster of medium and large scale firms that had 20 or more workers.

### **5.3.3 Unit of Analysis**

In this study, the unit of analysis was a 'firm', which was defined as 'an establishment in which garment production activities particularly the apparel manufacturing took place. Firms involved in fabric or yarn production and those involved in interior designs such as curtains, beddings and other exterior (non-apparel) textiles products were not included in the sample. For integrated textile manufacturing firms, my study focused only on the garment production activities. Firms in the informal sector were also excluded from this study on the basis of the fact that their potential to participate in global value chains was limited as demonstrated by McCormick *et al.* (2002), Bigsten and Kimuyu (2004), and Chapelle and Plane (2005).

### **5.3.4 Screening Survey – Identification of Firms**

The fieldwork for this study started in April 2006, with the first assignment being to establish the number and the existence of firms in this industry. As already mentioned in the preceding section, the master file of registered firms had numerous problems such as inclusion of firms which either had never started or were defunct. In addition, the master file was seldom updated. More importantly, the garment industry is characterised by high rate of entry and exit (Mengistae, 2004). Given these limitations, it is advisable to develop a comprehensive list of all garment firms when carrying out research. In my study, this was done by reviewing existing studies, visiting public and private institutions with linkages to garment industry, and through the key informant interviews. This process enabled me to piece out information and to get a rough estimate of garment firms in Kenya.

In terms of existing studies, IDS University of Nairobi in 2000 undertook a census of garment manufacturing firms in Nairobi which found that there were approximately 2,200, comprising formal and informal firms. According to this survey, nearly 75 per cent of the firms were micro enterprises (see Kinyanjui and McCormick, 2003; McCormick *et al.*, 2002). Another census of the industry conducted by the Central Bureau of Statistics (CBS) [now Kenya National Bureau of Statistics (KNBS)] indicated that there were approximately 169 garment firms with at least ten workers in 1999.<sup>56</sup> In Fukunishi *et al.* (2006), whose fieldwork had been undertaken in 2003, among small, medium, and large scale firms using a similar approach had established that there were 105 firms with at least 10 workers. The Kenya Institute for Public Policy Research and Analysis (KIPPRA), was contacted for the list of garment firms included in 2002-2004 waves of the World Bank's RPED project (see also Bigsten and Kimuyu, 2002).

Having compiled a list of firms with at least 20 workers from these studies, we consulted Investment Promotion Centre [currently Kenya Investment Authority (KIA)] for the list of firms operating under the MUB programme and the Export Processing Zones Authority (EPZA) for EPZ firms. The Kenya Association of Manufacturers (KAM), Kenya Private Sector Alliance (KEPSA), and the Kenya National Chambers of Commerce and Industry (KNCCI) provided list of their members in garment industry. The Ministry of Trade and Industry was also contacted for the list of garment industries. Finally, Federation of Kenya Employers (FKE) and Kenya Tailors and Textiles Workers Union (KTTWU) were contacted for the list of firms which they were dealing with.

The updated and consolidated list of firms obtained from all these sources yielded a total of 154 firms with at least 20 workers (Table 5.2). Although the firms were spread across the country in all major industrial towns, the contacts provided for majority of them were located in Nairobi and Mombasa region. This further justifies why our fieldwork was based in these two cities.

---

<sup>56</sup> The CBS has always been problematic because it often includes firms that were registered but never begun operations. It also includes firms that may have changed business lines such as from manufacturing to trading and firms that are no longer in operation.

The second stage of this fieldwork entailed establishing whether firms in the consolidated lists were actually in operation and their physical location. During this exercise, I introduced my study to would be respondents and also requested them to participate in the survey. This opportunity was also used to establish if there were other garment manufacturing firms that we in the neighbourhood or the ones that this firm dealt with regularly. We contacted all the 154 firms using contact details provided in the consolidated list.

**Table 5. 2: Summary of Firms Contacted in the Survey**

<b>Total Number of Firms in the Updated List</b>	<b>154</b>
Firms not Traced	33
Firms Engaged in Fabric & Textiles Production (not in Garment)	15
Firms Confirmed as having closed down	27
<b>Firms Contacted for Interviews</b>	<b>79</b>
<b>Firms disqualified after Interviews</b>	<b>7</b>
Firms found not to be in Garment Production	3
Firms with Less than 20 Workers	4
<b>Eligible Firms for the Survey</b>	<b>72</b>
Pending	10
Declined	18
<b>Completed</b>	<b>44</b>

Source: Author's Fieldwork, 2006

Of the 154 firms, I was unable to reach 33 using the contact information provided, prompting me to conclude that they had either closed down or they never started operations. Going by the physical address provided, I also made visits but could not trace these 33 firms. Another 27 firms were confirmed to have closed down. There were 15 firms which although classified as garment manufacturing, were actually engaged in fabric (textiles) production; and these were therefore excluded from the survey. Of the remaining 79 firms, seven were disqualified: three (3) because they were no longer in garment manufacturing and four (4) had less than 20 workers.

The remaining 72 firms were contacted during the data collection exercise; unfortunately, eighteen (18) of them declined to participate in the survey even after I made several requests. Another ten (10) did not decline outright, but kept postponing the interview

until the survey was concluded. Therefore, data analysis for this survey is based on forty-44 firms representing more than 61 per cent of all eligible firms.

### **5.3.5 Procedure for Data Collection**

At the beginning of this fieldwork, key-informant interviews were conducted among key stakeholders of the garment industry. This exercise provided me with the general information about industry's operations and statistics which were not published. A survey method was used to collect the garment manufacturing firms' information. Prior to this survey, a screening survey was conducted and its main objective was to identify the existence, location and operation of the firms (see section 5.3.5). This process relied mainly on telephone interviews and visits to firms so as to familiarise myself with the operation.

The main survey was conducted through a semi-structured questionnaire (Appendix 8). During the survey, observations were made about how the factory was operating. In some cases, respondents were kind to offer me a factory tour to see how garment manufacturing was taking place. Ten case-studies were purposively selected among the 44 firms in the survey with a view to collecting more detailed information about the firm.

Six research assistants were recruited for this fieldwork to assist me in data collection, entry and analysis. I trained the team appropriately on issues of data collection and the objectives of this study prior to the testing of instruments. At any interview, I was accompanied by at least two research assistants and no interview took place in my absence. The research assistants' main task was to take notes and fill in questionnaires during the interview. One of the research assistants was in charge of making appointments and coordinating the others to attend a particular interview. Because of the random nature of the appointments, it was necessary to have a big team of research assistants so that at any given time, persons would be available to accompany the researcher.

Six research assistants were recruited for this fieldwork to assist the principal researcher in data collection process and data entry. This team was given appropriate training by the researcher on issues of data collection and what were the objectives of the current study to be undertaken. At least two research assistants accompanied the researchers during an interview and no interview took place without the researcher. The main task of research assistants was to take notes and fill in questionnaires during the interview. One of the research assistants was in charge of making appointments and coordinating research assistants to attend a particular interview. Because of the random nature of appointments, it was necessary to have a big team of research assistants so that at any given time, persons would be available to accompany the researcher.

#### **5.4 Data Collection Methods and Instruments**

The empirical analysis of this study was based on cross sectional firm-level data collected in 2006 among medium- and large-scale garment manufacturing firms. The primary method of data collection was survey supplemented by case-studies and observation methods. Key-informant interviews were conducted to gather information mainly on policy issues and general performance of the industry.

##### **5.4.1 Firm-Level Survey - Questionnaire**

The firm-level survey was conducted using questionnaires among the 44 garment manufacturing firms. The questionnaire entailed structured and semi-structured questions, in which all study variables were included either directly or indirectly (see Appendix 4). Given that this survey targeted top management staff, it was critical to secure an appointment prior to conducting any interview.

Face-to-face interview method was used in all cases, with the principal researcher leading the discussion, while research assistants were taking notes and filling in the questionnaire. Immediately after the interview, the research team held a meeting to harmonise the information received from the respondent. In some cases, we had to talk to

more than one person in a firm due to the diversity information that the questionnaire sought.

#### **5.4.2 Key-Informant Interviews**

Their purpose was to collect information from a wide range of people with first hand information about the garment industry in Kenya. In this study, they were conducted at the beginning of the survey to facilitate familiarisation and acquaintances with the industry. By use of an interview guide, the researcher framed questions spontaneously, probed for information and elaboration (Appendix 3). Research assistants helped with the taking of notes during interviews. Since they were conducted among people with diverse background, we were able to get varying perspectives and underlying issues or problems relating to this industry (Table 5.3). These interviews were conducted face-to-face and sought varied information from the respondent depending on the respondent's experience and expertise with the garment industrial activities.

**Table 5. 3: List of Key Informants for the Study**

	Informants Institution	Respondent's Position	Key Issues of
1	Ministry of Trade and Industry	<ul style="list-style-type: none"> <li>- External Trade</li> <li>- Domestic Trade</li> <li>- AGOA Desk</li> <li>- COMESA</li> <li>- ACP-EU</li> </ul>	Trade Policy, Kenya and AGOA, Regional Integration, Economic Partnership Agreements and MFA termination issues
2	Export Processing Zones Authority	Research Manager Investment Manager	The EPZA programme, its policy and the number of garment firms under the EPZ
3	Kenya Association of Manufacturers	Programme Officer Chairman - KAMEA	KAMEA, its operations and membership
4	Kenya Investment Authority	Research Manager	Investment Act 2006, MUB programs and investment registration in Kenya
5	Federation of Kenya Employers	Research Officer	Employment Policy & Conditions in the Garment Industry
6	Kenya Tailors & Textile Workers Union	General Secretary	Labour issues in the Garment Industry
7	Diplomatic Missions - China - India	Commercial & Trade Attaché	Sino-Kenyan Trade: Textiles and clothing, others Indo-Kenyan Trade: Textiles and clothing, others
8	Local Buyers	ONE WAY Ltd Safaricom Ltd Kenya Airport Authority En Karasha Fashions	Patterns of Local Buyers (high end & corporate)
9	Canadian Trade Officials (7)	Trade Canada Industry Canada Statistics Canada Trade Facilitation Canada Canadian Council on Africa CIDA Canadian Apparel Federation	The textiles and Clothing Industry in Canada Garment consumption behaviour in Canada Implications of China and India on the sector Knowledge and Impact of the MAI for LDCs Support to African countries in Garment industry
10	Buyers (3)	Levis Strauss The Gap Sears	Sourcing Behaviour of these retailers Control in production activities globally Relationship with Africa's garment producers Sourcing from Kenya and other SSA

Source: Author's Fieldwork (2006)

Another set of key-informant interviews were conducted with government officers in Canada; and with representatives of some global buyers in Canada and the US. These interviews were carried out between January and April 2007, when the researcher was based at the North-South Institute, Ottawa. For the US buyers, interviews were conducted during the MFA forum meeting in Toronto organised by Maquila Solidarity Network (MSN) in April 2007.

### 5.4.3 Case Study Method

In his classic book on case study research, Yin (1994) argues that case research and survey methods are better suited than other techniques for analysing contemporary events. Case research is superior to survey methods at answering the "whys" and "hows" because the case analysis can delve more deeply into motivations and actions than structured surveys. This approach may employ a number of data technologies such as life or oral histories, documents, in-depth interviews, and participant observation (Yin, 1994; Remenyi, 2006; Berg, 1998).

The case study method allows the researcher to retain the holistic and meaningful characteristics of real life event such as organizational or managerial process. They seem to be the preferred strategy when 'how' and 'why' questions are being posed, when the investigator has little control over events and when the focus is on a contemporary phenomenon within some real-life context (Kolhbacher, 2006). Three types of case studies can be classified as *intrinsic*, *instrumental*, and *collective* case studies.<sup>57</sup> In our study, case study method was used to provide in-depth information for affirming or rejecting propositions derived from the survey- which could be defined as intrinsic case studies.

In total of 10 case-studies were selected from the sample for in-depth investigations about their participation in the global value chains. The methodology entailed in-depth interviews and observation. The firms selected were those that exhibited unique characteristics and were selected from among EPZ, MUB and local categories. By use of an interview guide, case studies collected detailed information regarding acquisition of raw materials, development of designs, marketing and the relationships that the firm had with buyers and suppliers (Appendix 4). Information on relations between producers, buyers, agents and suppliers was also discussed in details.

These firms were purposively selected on the basis of unique and different attributes critical towards answering research questions. Another consideration was the

---

<sup>57</sup> See Berg (1998 p. 216) for more discussion.

managements' willingness to share in-depth information. Table 5.4 highlights key variables of the firms included in our case-study.

**Table 5. 4: Attributes of Firms in the Case Study**

	<b>Age</b>	<b>Size</b>	<b>Products</b>	<b>Markets</b>	<b>Ownership</b>	<b>Customers</b>
<b>1</b>	17	100	Jeans, t-shirts, Casuals	Domestic, EU	Local Private	Tourism, EU Retailers, High end domestic
<b>2</b>	2	57	Baby wear, corporate uniforms	Local, EU	Local, Private	Corporate clients, local distributors, NGOs
<b>3</b>	19	150	Jeans, T-shirts, Shirts	Domestic, Regional	Local Private	Supermarkets, Boutiques, Uniform distributors,
<b>4</b>	26	275	Woven garments – shirts, blouses, suits, uniforms	Domestic, Region	Local, private	Wholesalers, Corporate, Supermarkets, Military
<b>5</b>	21	100	Woven – shirts, suits, blouses, corporate uniforms	Domestic	Local Private	Corporate clients, uniform retailers
<b>6</b>	10	116	Woven and Knit garments – t-shirts, polo shirts, casual wear, Kikoys, bio-cotton t-shirts	Domestic, Regional EU	Foreign Private	ONE WAY Tourist industry, NGOs, Germany buyers
<b>7</b>	5	1,200	CMT – Knit Garments – t-shirts, shorts, sportswear, baby wear, nightwear	US	Foreign EPZ	US Retailers
<b>8</b>	5	2,300	Casual wear – knit and woven t-shirts, jeans, skirts, blouses, polo-shirts, shirts, bottoms, nightwear	US	Foreign EPZ	US Retailers
<b>9</b>	3	1,500	CMT – knit and woven – jeans, shirts, t-shirts, ladies tops, trousers, sportswear	US	Joint local Foreign, EPZ	US Retailers
<b>10</b>	15	1,000	CMT – jeans, ladies wear, polo shirts, suits, children wear	US	Foreign EPZ	US Retailers

Source: Author's Fieldwork (2006)

The other technique applied in the in-depth interviews is observation. Through observation, we were able to document activities, behaviour and physical aspects without having to depend upon respondents' willingness and ability to respond to questions. In this study, observation was done after the firm-level survey. In most cases respondents (managers) voluntarily took us around the factory which helped us to see how operations run.

Through the observation technique we were able learn about the garment production process, and different in technologies applied in garment manufacturing. It was also a good opportunity to see some of the machines and how they operated in garment production.

## **5.5 Operationalisation of Key Variables**

In our study, variables used in the analysis were divided into two categories: dependent and independent variables.

### **5.5.1 Dependent Variables**

The study had four independent variables, namely process upgrading, product upgrading, functional upgrading and output.

*Process upgrading* refers to ability of a firm to improve processes that make production more efficient. Four different variables were used as proxies for process upgrading namely investment, training, production layout, and quality control. Investment was defined as the value of new production capital stock acquired during the year 2005; while training was defined as the number of hours or days that production workers were trained during the year 2005.

Production layout was a dummy variable taking a value of 1 if a firm had changed its production layout during the year and '0' otherwise. If a firm had changed from say 'make-through' to 'assembly-line' between 2004 and 2006 it was considered to have undergone layout change. In addition, if a firm had undergone a change in production layout during the period it was considered to have experienced process upgrading. Introduction of quality control programs that enhance internal processes was also considered to represent process upgrading. It was measured by the number of quality controls in a production line.

*Product upgrading* refers to producing garments of better quality, more sophisticated and carrying a better price (see Humphrey and Schmitz 2000; Gibbon and Ponte, 2005). In this study, three proxies were adopted namely, sales to branded buyers, the source of fabrics in the firm and production of high quality products. The variable '*Sales to Branded Buyer*' was defined as a percentage of sales that a firm made directly to branded buyers in 2005. On '*Quality Raw Materials*', firms were asked if in 2005, they had changed sources of their raw materials supplies and what was the motivation, as long as firms indicated that such changes were driven by need for better quality.

This variable was defined as percentage of higher quality fabric in total fabric used was the proxy for product upgrading. A firm which had introduced new production activities such embroidery, sandblasting and stone washing were considered to have experienced product upgrading.

*Functional upgrading* relates to acquiring new activities within the value chain. In the study, we used four different measurement of functional upgrading. These included design-development, own-brand sales, sourcing of fabrics, and marketing. Design development was measured as the percentage value of output in 2005 that was designed internally within the firm. Pattern-making and pattern-grading, which are technical functions in garment production, were not considered to as 'designs'.

'Own brand' was a percentage measure of all sales bearing the brand name of the firm, ranging between zero and 100. The survey also sought information on how sourcing of raw materials was done in the firm. Firms which were doing the procurement of fabrics and other raw materials were assigned a value of one or zero otherwise. We introduced a dummy variable to represent marketing of products. If a firm was in charge of marketing its products then it was assigned a value of one and zero. If a firm had graduated from CMT orders to FOB orders, it was considered to have experienced functional upgrading.

In the technical efficiency estimation, the dependent variable (*output*) was measured as the value-added in Kenya shillings. Drawing from pervious studies, the value-added was computed as the value of gross output in the year 2005 less cost of raw materials and

indirect inputs (Bigsten *et al.* 2004; Ngui *et al.* 2008; Kimuyu, 1999). Raw materials were measured by their cost as given by firms, while indirect inputs were measured by all aggregate expenses other than capital, labour and raw materials. Indirect costs were measured to include costs such as rent, utilities, telephone, transport and other overheads.

### 5.5. 2: Independent Variables

Inputs in the production function used to estimate technical efficiency included capital and labour. *Capital* denoting human made goods used in production of other goods and was measured by the replacement value of machinery and other equipment corrected for degree of capacity utilisation as given by the firms following Lundvall *et al.* (2002).

Capacity utilisation referred to the percentage rate of installed machinery and equipment that was actually utilised during the financial year 2005. It also represented the percentage usage of all machinery and equipment in the firm during the year.

*Labour* refers to the physical work done for wages and was measured as the total wage bill of the firm in the financial year 2005. This was based on the premise that labour represents human capital stock available to a firm in a given period and that for garment production activities; labour is perhaps the single most important variable (Kimuyu, 1999). Other measurement of labour include number of employees which should be adjusted to a number of factors characterizing labour in order to provide an accurate measure of labour, for instance, changes over time, degree of employment whether full-time or part-time, permanent or casuals, types of labour and the quality of human capital (Söderbom and Teal, 2004).

Some of these classifications were not available for some of the firms in our sample, hence wage bill (including allowances) was considered as an appropriate measure given that it accounts for all these factors to some extent.<sup>58</sup>

---

<sup>58</sup> Various studies based on African manufacturing have shown that wages are positively correlated with firm size conditional on standard human capital variables like level averages of employees' years of education, tenure, age and experience (Teal, 2000; Bigsten *et al.* 2004).

In order to explain differences in technical efficiency, an additional set of variables assumed to influence technical efficiency were obtained in line with previous studies (Blattman *et al.* 2004; Bigsten *et al.* 2004; Caudill *et al.* 1995 and Lundvall *et al.* 2002). The selection of these variables focused on firm-specific factors rather than those common to all firms. These variables included size, age, exports, degree of foreign ownership, and managers' skills.

Firm size and age variables have been commonly and widely used in most efficiency studies as factors affecting the performance of the firm. This is always based on the Jovanovich (1982) theory of 'noisy' selection which states that efficient firms grow and survive while inefficient ones decline and wither out (fail). Profit-maximizing output is an increasing function of firm-level efficiency that is fixed, and since efficiencies are unknown to the managers, they must infer them by operating in a market. With time, efficient firms grow and survive, while inefficient firms remain small or exit (Lundvall *et al.* 2002). Larger firms tend to be more efficient than small ones. Efficient firms grow and gain more efficiency. Older firms are expected to be more efficient than younger ones (Jovanovich, 1982; Mengistae, 1996).

These variables are able to capture issues to do with learning by export, organizational superiority and first mover advantages. In our study, firm-size was measured by the number of employees working in the firm during the financial year 2005 as defined in Table (5.1). Firm age was computed as the difference between 2006 and the time when a firm was established in years.

Export promotion hypothesis postulates that exporting firms are more productive and efficient than non-exporters (McCormick *et al.* 2007). Efficient firms may self-select into exporting and that the competitive pressure in the export markets can spur firms to raise their performance.

Contact with international buyers in the garment industry allows collaboration through which they work together with the producer in order to improve performance of the latter

leading to efficiency growth (Tybout, 2000). Firms participating in the export market become more efficient owing to the learning-by-doing hypothesis.

In our study, there were two variables representing *exports*: (i) the percentage share of total output exported in the year 2005 (Bigsten, 2004; Clerides *et al.* 1998), and (ii) an export dummy (EXPD) which represented participation in export markets (McCormick *et al.* 2007; Söderbom 2004). Our results were in favour of the 'percentage share of export' making us drop the 'export dummy'. The export variable ranged from zero to 100 per cent and therefore was able to capture the degree of participation in the export market.

From the GVC literature, the export market determines the extent to which a firm can upgrade (Gereffi and Memedovic, 2003). We introduced an *export destination* variable to capture different export markets that highest percentage of exports landed. The main categories of this variable were the US, EU, Canada and African markets. A proxy of this variable was the percent value of sales to each of these markets.

*Lead-time*: Literature suggests that following MFA termination, garment trade has become very competitive such that the low wage which for a long time gave developing countries a comparative advantage in assembly activities is no longer an issue (Audet, 2007; Adhikari and Weeratunge, 2007). Buyers are keener on quick turnaround times in the fashion and time sensitive clothing markets than buyers in other value chains. Lead time is crucial in determining continued participation and upgrading within the value chain. It was measured by the number of days a firm would take from the time an order was confirmed to the time products were delivered to the buyer.

*Length of a chain*: This was measured as the number of intermediaries that a firm had to go through before an order is confirmed or before goods reaches the final buyer. This was mainly based on respondent judgement.

*Education*: Formal education is expected to be positively related to efficiency level since persons with more education may adapt more readily to changing markets conditions and may seek and assimilate information more cheaply than less educated persons. This is a

percentage ratio of workers-with-secondary education in total labour force of a firm during the year 2005, which was meant to capture the skill experience in the industry. Another proxy for skills availability was the number of *expatriates* working in a firm and which case, a high number of expatriates would imply low skill availability in the country. Of these two proxies, the ratio of workers with higher education appeared to represent skills in the industry better and was therefore adopted in our estimations.

*Spillover:* The overall objective of export promotion schemes such as EPZ was to promote the flow of foreign investments (Kimuyu, 1999). Expectations were that entry of foreign-owned firms with their expertise would facilitate knowledge and technological transfer to the entire industry through the spill over effect. This would encourage local firms to venture into the export markets and by so doing improve their technical efficiency and export capacity. We expected a positive impact of the foreign owned firms in the industry on technical efficiency and upgrading.

In our study and drawing from previous studies, a proxy for spillover was the degree of foreign ownership represented by percentage share of foreign capital in the firm's capital structure.

*Managers' skills:* It has been argued that manufacturing firms in developing countries lack the technical capacity or skills to perform well compared to their counterparts in developed countries. For firms to respond effectively to the post-reform structure of incentives, entrepreneurs and workers should have the requisite technical capabilities (the skills and information) to establish and operate modern machinery and the learning ability to upgrade these skills over time.

Managerial ability may result in differences in technological usage and in the workers quality which in turn affects the choices a firm makes in meeting the market demand more efficiently. Literature suggests several proxies for managerial abilities, but the most commonly used ones are manager's formal education, age and experience. Of the three proxies managers' experience was found to be a better proxy for managers' skills. This

variable was measured as the number of years the 'most influential' decision maker had worked in the garment industry.

## **5.6 Data Presentation and Analysis**

### **5.6.1 Data Cleaning and Coding**

After the data collection exercise was concluded, qualitative and quantitative data were checked for completeness and gaps. For the firm survey, questionnaires were checked for data completeness and gaps were filled. Data was then coded and entered into the appropriate computer program for analysis. We checked for outliers in the data using 'Squared-Mahalabonis Distance' and were corrected by counterchecking the raw data or confirming with respective respondents given that our sample was relatively small.<sup>59</sup>

### **5.6.2 Data Analysis**

Qualitative data collected through in-depth interviews, observations and key-informant interviews was mainly analysed through content analysis (see Berg, 1998; Frankfort-Nachmias and Nachmias; 1996).

Quantitative data was analysed through descriptive statistics aimed at getting a general understanding of how the industry functioned. A general picture of the industry is presented in Chapter six, where specific characteristics of firms are discussed. Data analysis is presented in form of frequency tables, cross-tabulations and graphs.

Technical efficiency estimates are presented in Chapter Eight. For our empirical analysis, Cobb-Douglas and translog stochastic frontier production functions were estimated and the estimated functions were statistically tested to select the function that best described

---

<sup>59</sup> Squared Mahalabonis distance points out observations for which the explanatory part lies far from the bulk of the data. The values of squared Mahalabonis distance are then compared with 95 percent quantiles of the Chi-square distribution with  $m-1$  degrees of freedom where  $m$  represents the number of independent variables (Ngu, 2008:40).

the data.<sup>60</sup> Following Battese and Coelli (1993, 1995), a one-step maximum likelihood estimation procedure used specified as:

$$\ln y_i = \beta_0 + \beta_1 \ln x_{1i} + \beta_2 \ln x_{2i} + \frac{1}{2} (\beta_{11} (\ln x_{1i})^2 + \beta_{22} (\ln x_{2i})^2) + \beta_{12} \ln x_{1i} * \ln x_{2i} + v_i - u_i; u_i \geq 0; \quad (5.1)^{61}$$

where:  $y$  = Output (value added in a garment firm)  
 $x_1$  = Capital (Replacement value of machinery adjusted for capacity utilisation)  
 $x_2$  = Labour (Total wage bill in the year).

Drawing from section (4.3.1), Lee and Tyler (1978) propose a formulation of technical efficiency assumed to be determined by firm specific variables, expressed as:

$$\mu = \delta_0 + \sum \delta_i z_i \quad (5.2)$$

where:  $\delta$  are unknown parameters to be estimated and the  $z_i$  represent the independent factors that influence efficiency of garment firms.

## 5.7 Data Reliability and Validity

In any research study, the researcher must be concerned with avoiding spurious conclusions attributable to questionable methodology and analysis (Neuman, 2006). Errors may arise from data collection and analysis and it is important we demonstrate that our methods were reliable and valid before we can draw conclusions.

Reliability is mainly concerned with the accuracy, consistency, stability, and repeatability of variable and data measurement in representing the true score of the subject being assessed (Neuman, 2006). For this study, the fact that we conducted a census implies that the research design enhanced 'unbiasedness' related with sampling. We can therefore argue that the selection of firms for this study did not affect the testing of hypotheses in any undesired way. In addition, our data analysis utilised a rigorous analytical techniques available such as Statistical Package for Social Scientist (SPSS) Version 15, FRONTIER

<sup>60</sup> It is pertinent to note that the Cobb-Douglas frontier is the restricted form of the translog frontier, in which the second-order terms in the translog function are restricted to be zero. Details about this estimation are as presented in Chapter 4.

<sup>61</sup> This model is also presented as Equation (4.2) earlier in Chapter 4

Version 4.1, and Oxmetrics enabling us to deduce some degree of reliability in our estimated results.

Validity refers to whether a particular instrument actually measures the construct it is designed to assess. It is an indication of the extent to which results obtained in a study are a true reflection of what is in reality and whether the findings can be generalised beyond the sample used. Our study was largely informed by earlier studies on issues of garment value chains [Gereffi, 1994, 1999; Bair and Gereff, (2001); Gibbon (2000); Gereffi and Memedovic (2003), Gereffi (1999), McCormick (2001); McCormick and Schmitz, (2002), and Fukunishi *et al.* (2002)]. The methodological approach for estimating technical efficiency was informed by recent studies such as Ngui (2008), Ngui *et al.* (2007); Chirwa (2007); Chapelle and Plane (2005) and Bigsten (2004). The research instruments were developed in consultations with academic advisers, were pre-tested and revised. This study utilised a triangulation methodology combining the qualitative and quantitative approaches. Based on these factors we can assume that the measurement instruments met the required validity standards.

## **5.8 Conclusion**

This chapter has outlined research methodology and design followed in undertaking this study. Starting with a brief summary on methodological paradigms in social sciences, the chapter provides a detailed account of the process followed in identifying garment firms for inclusion in the survey as well as the case studies. Key informant interviews are also discussed. This is followed by a section on the methods used to collect data and how variables were operationalised; and then issues of data analysis. The chapter concludes with a discussion on challenges and validity of data collected during our fieldwork. The next two chapters present study findings.

## CHAPTER 6

### CHARACTERISTICS OF THE KENYAN GARMENT FIRMS

#### 6.1 Introduction

Before we discuss upgrading and technical efficiency in the Kenyan garment industry, we present a factual description of the industry. In this study, a survey of 44 garment manufacturing firms drawn from medium and large-scale enterprises was conducted. This survey was supplemented by case studies and key informant interviews. This chapter presents key issues regarding garment firms attributes as precursor for discussing upgrading and technical efficiency of the industry.

#### 6.2 Legal Status of Garment Firms in Kenya

The vast majority of garment enterprises in our study are registered as private companies, constituting 95 per cent (42 enterprises). The remaining two enterprises (5 per cent) were registered one as partnership and the other one as Non Governmental Organization (NGO). This implies that all the firms in our sample were in the formal sector. Previous studies have shown that in the clothing industry informality decreases with an increase in firm sizes (McCormick *et al.* 2008; Ikiara *et al.* 2002; Kinyanjui *et al.* 2004). Moreover, other studies have argued that formality and informality affect performance indicators such as access to credit (Chapelle & Plane 2005, Mbwambo, 2005). Firms in our study having been drawn from medium and large scale category, it is not surprising that they were all registered as formal enterprises.

Most of the firms (68 per cent) were registered as independent companies, 25 per cent were registered as subsidiaries of foreign firms and only 7 per cent were registered as subsidiaries of domestic firms. Although many firms especially within the EPZ appeared to have linkages with foreign firms, they were actually registered as independent firms in Kenya. One of the respondents in our survey representing a foreign owned firm but

Operating as independent firm in Kenya reported that foreign firms preferred to operate as independent firms rather than a subsidiary of foreign firms because of many registration requirements for the latter category. In spite of being registered as independent firms, head offices located abroad played an active role in the decision making process of the local enterprise. A firm's head office played a key role in the decision making process.

### 6.3 Location and Export Platforms

#### 6.3.1 Location of the Garment Firms

The location variable considered different effects on performance of garment manufacturing firms that may exist in different study sites. Mombasa, the main port of entry, would confer transportation cost advantages on both imported inputs and exports. Nairobi has the advantage of being the largest city with a more developed infrastructure relative to smaller cities in Kenya. It is for this reason that most of the firms in our survey were located in Nairobi and Mombasa.

Of the 44 firms in our study, 30 of them were located in Nairobi and 14 in Mombasa accounting for 68.2 and 31.8 per cent, respectively (see Table 6.1). Within the Nairobi region, six of the enterprises were in Athi-River (all of them EPZ), two in Kikuyu town and one in Thika town. Respondents reported that infrastructural facilities –such as transportation, communication and business services - influenced their location decision. The export processing zones are also clustered in these two cities, further explaining why most of the EPZ garment firms choose these locations.

**Table 6.1: Firm Location by Export Incentive Programme**

		EPZ	MUB	None	Total
<b>Nairobi</b>	City	3	3	15	<b>21</b>
	Athi-River	6	-	-	<b>6</b>
	Kikuyu	-	-	2	<b>2</b>
	Thika	-	-	1	<b>1</b>
<b>Mombasa</b>	City	6	1	6	<b>13</b>
	Voi	1	-	-	<b>1</b>
<b>Total</b>		<b>16</b>	<b>4</b>	<b>24</b>	<b>44</b>

*Source: Author's Fieldwork (2006)*

### 6.3.2 Export Platforms

As Table 6.1 confirms, there are two existing export platforms available for garment manufacturing firms in Kenya namely: Manufacturing-Under-Bond and Export Processing Zones. As discussed in Chapter 2, these export platforms serve the dual purpose of making it possible for enterprises to obtain inputs at world prices so that such firms can gain export price competitiveness and removing negative trade protection from exports (Glenday and Ndi, 2003). Of these two export platforms, the EPZ is the most popular because of its generous tax and administrative incentives (see Chapter 2). In our case, we classify garment firms according to the export platforms that a firm operates in.

Out of the 44 firms in the survey, 16 (36.4 per cent) were operating under the EPZ programme, 4 (10 per cent) under the Manufacturing-under-Bond (MUB), and 24 (54 per cent) operated as 'local-firms' (that is neither in EPZ nor MUB programme). Those firms operating under the EPZ and MUB programme are export-oriented and legally are expected to export 100 per cent of their production. On the other hand, 'local firms' mainly focus on the domestic market even though some of them did export to the African regional markets and European markets. None of the firms in the local category is exporting 100 per cent of their output as is the case with the EPZ and MUB firms. They were involved in both the domestic and export markets.

Approximately 63 per cent of the firms in our sample were exporters, most of which were located in Nairobi (67 per cent) and the rest in Mombasa (33 per cent), 19 and nine firms, respectively. With exception to an EPZ enterprise located in Voi, none of the firms located in other towns (Kikuyu and Thika) were exporters. This may suggest that the distance to the port and the capital city, where government, judiciary and business services are situated affected the decision of garment firms to export.

Garment firms in Kenya can be classified as either pure exporters or local firms. Pure exporters are mostly foreign owned and located within the EPZ or MUB programme. Local firms are those whose owners are Kenyan either of African or Asian origin. Majority of the firms in this category produce for the domestic market, but others combine this with the export markets. There were 20 pure exporters and 24 local firms in our sample (see Table 6.1).

## **6.4 Firms' Age, Size and Labour Issues**

### **6.4.1 Age of Garment Enterprises in Kenya**

Majority of the firms were established after 2000 (43.2 per cent) which can be attributed to the enactment of AGOA in 2000 (Table 6.2). Between the period 1990 and 2000 only 6 firms (13.6 per cent) were established. More than a third of the firms (34.2 per cent) were established prior to the economic liberalisation in the mid-1980s that is during the ISI industrialisation period. Two of the firms were established before independence in 1963, while, four were established during the first decade of independence. Further analysis reveals that majority of the export-oriented firms (75 per cent) were established between 2001 and 2003 which coincided to the enactment of the AGOA.

There was not a single export-oriented firm established after 2004, which can be attributed to the uncertainty related to the removal of quota regime in 2005. As indicated in Table 6.2, the enterprises' age ranged from one to 84, with a mean age of 16.16 years. The oldest firm was 84 years, having been established in 1922, while the youngest was established in 2005. Firms less than 10 years old accounted for more than half of the surveyed firms (56.8 per cent).

We can argue that export-oriented large firms are a recent phenomenon resulting mainly from the AGOA trade preference in the US market and the existence of quota restrictions prior to 2005. Difference in means between age and exporting variable shows that the difference in means is statistically significant at 1 per cent. For local firms, the mean is 25.13 years with a standard deviation of 19.04, while that of exporting firms was 5.4 years with a standard deviation of 3.35 (see Appendix 9). Cross tabulation between age and export platforms reveals that older firms tend to be in the local category as opposed to EPZ and MUB firms. This is an indication of high resilience by local firms whose options for relocation to other countries are minimal. Firms in this category are striving to remain in operation by adopting different strategies by shifting from standard garments to uniform and baby wear (see discussion in section 6.6).

**Table 6.2: Firms Distribution by Age**

Age	Years	Firms	Percentage	Cumulative %
1 – 5	2001-2006	19	43.2	43.2
6- 10	1995-2000	6	13.6	56.8
11-15	1991-1995	2	4.5	61.3
16-20	1985-1990	2	4.5	65.8
21-25	1981-1985	4	9.0	74.8
26-30	1976-1980	5	11.4	86.2
31-35	1971-1975	0	0	86.2
36-40	1966-1970	1	2.3	88.5
41 +	Before 1966	5	11.4	100
<b>Total</b>		<b>44</b>	<b>100.0</b>	

*Source: Author's Fieldwork (2006)*

Other local firms have ventured into new export markets as shown in section (6.7). According to one of our respondents (Case Study 1) *"There is need for firms to be more strategic if they are to survive in this very competitive garment market; to achieve this, the state has to play a facilitative role of ensuring that the environment is conducive for business to operate. However, the government has shown no interest in this industry and the entire manufacturing"* (Fieldwork, 2006).

Evidence from the case studies (case study seven, eight, nine and 10) show that export-oriented firms in Kenya were driven by EPZ incentives and the preferential market access under AGOA (see Box 6.1). The local firms in our case study indicated that they were ready to face competition, by enhancing their efficiency in production. A respondent (Case Study six) argued that her firm was working closely with buyers to develop organic cotton garments for the European niche market and was optimistic that the firm's productivity would grow in the post- MFA period.

## Box 6. 1: Motivations for Operating in Kenya

### **What is the motivation for operating in Kenya? What if AGOA preferences are not there?**

*"Our parent company in Taiwan has several subsidiaries in African which were established mainly due to AGOA. When AGOA trade preferences are over, the firm will close shop and move to other locations" (Case 7).*

*"This firm is the oldest among all the EPZ firms having been established in 1992, although one of the main shareholders has roots in Kenya, the main attraction to open a subsidiary in Mombasa was the EPZ incentives. With the MFA termination these incentives are no longer that important and the only reason that we continue to produce in "Kenya is the AGOA. The owners are already shopping for another site to relocate to perhaps in the Americas which is closer to the US market" (Case 10).*

*"The main driving force of all these EPZ firms in Kenya including ours is the Market access to the US provided by AGOA. We get about 17% duty waivers (through AGOA) which enhance our competitiveness. Without the AGOA, we are likely to close down" (Case, 9).*

*"Our firm is already considering establishing a branch in Ghana where government support is high and cost of production is low. From Ghana, a manufacturer is able to sell to the US and the Canadian market duty free which is not possible in Kenya. If AGOA preferences are not there, then we shall close down this firm" (Case 8).*

Source: Author's Fieldwork (2006).

Pearson's Rank correlation indicated a negative and a significant relationship between firm age and exporting (see Table 8.1). The coefficient of correlation is -0.39 which is significant at one (1) per cent. Most of the exporting firms were established in response to the AGOA enactment in 2001.

### **6.4.2 Firm Size Distribution**

Many studies concur that one of the strengths of the garment industry lies in its labour-intensity (McCormick *et al.* 1997; Rolfe and Woodward 2005; Phelps *et al.* 2008). In our study, employment as a measure of firm-size varied significantly across the firms (see Table 6.3). The firm with minimum number of employees had 20 and the one with the highest number had 2,300 employees. The mean number of employees was 468 with a standard deviation of 612.5. Less than a third (31.8 per cent) of the firms in our survey were classified as medium-scale, large-scale firms accounted for 40.9 per cent while large-scale firms accounted for 27.3 per cent. Overall, more than 60 per cent of the firms in our survey were in the large- and very large- scale category.

**Table 6.3: Number of Employees in 2005**

	<b>Workers</b>	<b>Firms</b>	<b>Percentage</b>	<b>Cumulative %</b>
Medium	20 - 75	14	31.8	31.8
Large	76 - 499	18	40.9	72.7
Very Large	500 and over	12	27.3	100.0
	Total	44	100.0	

*Note: This number includes fulltime, casual, paid and unpaid workers.*

*Source: Author's Fieldwork (2006)*

Further analysis revealed that employment in the industry differed significantly across firms' categories. For example, EPZ firms in general had more employees than the MUB and 'local' firms. In the EPZ category, the mean employment was 1,236 employees with a standard deviation of 1,334; while within the MUB, the mean was 186 and only 75 in the 'local' category with standard deviations of 85 and 46, respectively. Although the representation of MUB firms in the sample was generally small (only four firms), the minimum number of employees in the MUB was 139 which was higher than that of the smallest EPZ firm which had 51 workers in 2005.

The maximum number of workers in the largest MUB firm was 245, a figure that is much lower than that of largest EPZ firm which had 2,300 workers (accounting for only 10.6 per cent). For the local firms, the minimum employment figure given was 20 workers, while the maximum employment was 356 workers. Remuneration and working conditions varied considerably across these firms but generally, employer worker relationships appeared favourable in locally owned firms than in MUB and EPZ firms where work targets were high.

Difference in means for employment between local and exporting firms indicate that they are statistically significant at 1 per cent. For local firms the mean employment figure is 94 workers while that of exporting firms is 917 workers with standard deviations of 16.17 and 150.45, respectively (see also Appendix 9). Similarly, Pearson's Rank correlation

indicated a positive and a significant relationship between firm size and exporting (see Table 8.1).

### 6.4.3 Labour and Gender Issues

Labour and gender issues are interlinked in the Kenyan garment industry as in many productive activities. Being labour-intensive, this industry plays a critical role in creating employment for a majority of Kenyans with low skills. Emerging evidence from both the survey and case studies show that female workers constitute a majority of the labour force in the industry (see Table 6.4). This gender distribution follows one that is quite familiar in other previous studies (Nordås, 2005; World Bank, 2007; Omolo, 2006; McCormick, 2007; ILO 2000).

ILO (2000) estimated that female workers in the clothing industry globally on average accounted for 74 per cent of the garment employment. As Table 6.15 (in section 6.10) confirms, female workers accounted for 65.33 per cent, with a standard deviation of 24.21. Some firms reported as high proportions of female workers as 97 per cent. This represents a big change from the old pattern of the garment industry whereby majority of workers were male (see for example, McCormick, 1999; McCormick *et al*, 2001, 1999). In our study, female dominance cut across all firms but it was more obvious in the case of new and export-oriented firms. We enquired from respondents why garment firms tended to employ more female than male workers. One of them had this to say "*female workers are more efficient in doing assembly work compared to male workers. In addition, they were less likely to be involved labour union and strikes compared to men, hence they were easier to manage*" Another respondent had this to say "*Female workers hardly go to look for employment outside the garment industry... as such one is assured of getting them back to the factory when orders resume*" (Case-Study Seven, 2006).

**Table 6.4: Proportion of Female Workers**

Percentage of female workers	Frequency	Percent	Cumulative %
0-25	7	15.9	15.9
26-50	8	18.2	34.1
51-75	13	29.6	63.7
76-100	15	34.1	97.8
No Response	1	2.3	100.0
Total	44	100.0	

*Source: Author's Fieldwork (2006)*

All firms in our study reported having some female workers, with the minimum proportion being around 10 per cent. The female ratio workers increased as firms shifted from 'make-through' to 'assembly-line' production process.<sup>62</sup> Locally-owned firms tended to have higher proportion of male workers than foreign owned firms. This is in keeping with McCormick *et al.* (2007) who found that the long established factories favour male workers, whereas the new EPZ factories hire mostly young women for their assembly line.

We conducted cross tabulations and differences in means between exporting and local with regard to proportion of female workers. Results indicated that for local firms the mean for proportion of female workers was 46.88 while that of exporting firms was 67.5 with standard deviations of 51.27 and 49.88, respectively (see Appendix 9). The difference in means was statistically significant at 1 per cent. Pearson's Rank Correlation indicated that exporting firms had a higher proportion of female workers, than local firms.

In spite of constituting a majority of labour force in the industry, our study finds that female workers were clustered in the lower end of production processes: working as machine operators, helpers and checkers. Studies conducted in other countries confirm that female workers are found in the operation process (World Bank 2007, ILO 2000, Weston *et al.* 2008). In Kenya, the ratio of female workers declined drastically from 76

---

<sup>62</sup> Make-through is a process in garment manufacturing whereby a tailor makes a complete garment while assembly-line is where each tailor makes part of a garment and passes it to the next tailor, a process that continues progressively until the garment is completed at the end of the line.

per cent in assembly sections to 28 per cent in supervisory and to less than 10 per cent in managerial sections.

Previous studies have alleged that female workers earn less than their male counterparts in the garment industry (Fukunishi *et al.* 2006; Omolo, 2006; Oxfam, 2003). Our study does not find evidence to support this claim. For most firms in our sample, remuneration was based on skills, experience and productivity. Women who tended to work for one factory for a long time were earning more than male workers new in the firm. There were higher chances of male workers to be promoted to supervisory positions and therefore earn more than the female workers who would remain in operations section for long.

The number of expatriate workers in the industry is relatively low. About 34 per cent of the firms did not employ expatriates while another 18 per cent had only one expatriate worker each. Firms with more than 10 expatriate workers were only 16 per cent. Majority of expatriate workers were in technical and management positions and none was reported to be engaged in direct production. This finding is in keeping with Phelps *et al.* (2009:318) who finds that “the majority of white collar workers were composed of expatriates from the MNE parent home country.” Elsewhere in this thesis, we have argued that the discrepancy in remuneration between local and expatriate workers is high. We also found that the foreign-owned firms engage a higher proportion of expatriate managers than locally owned firms. In addition, exporting firms were more likely to employ expatriate managers than non-exporting firms. This reiterates an earlier observation that manufacturing for export market may require technical skills that may not adequately available in Kenya.<sup>63</sup> In one of the case study (Case study eight), the respondent reported that his firm had in the past tried to recruit local graduates with textile engineering but they were unable to cope with garment production. The firm has been urging local institutions to train middle level technical staff for garment production but none is doing so. As a result, the firm has to depend on expatriate technical staff. This is not only expensive for the firm but also denies employment opportunities to the local Kenyans.

---

<sup>63</sup> The decision to hire expatriates is influenced by broad considerations such as expatriate salaries, government labour policies, expatriates qualifications, ability to train local staff and technological constraints (Ikiara *et al.*, 2002:51). Contractual arrangements with expatriates are for short periods of one to three years renewable through mutual agreement.

Increased competition in global garment trade and price squeeze by global buyers has made firms to re-examine their strategies. In McCormick, *et al.* (2006), it was reported that buyers were pushing local producers to lower their CMT prices by 25% to match those being offered by Asian producers. Similarly, Nordås (2005) observe that in the highly competitive environment where firms face almost fixed prices for most of the inputs and output, the only variable input for adjustment is labour. This may explain why firms tend to re-organise labour contracts whenever the market trembles. Our study findings indicate that factories are increasingly hiring workers on short term contracts instead of permanent employment. This finding seems to corroborate findings by McCormick *et al.* (2006), Phelps *et al.* (2008).

We found that both exporting and non-exporting firms were enhancing their efficiency in production by cutting on labour costs mainly through downsizing labour and casualising labour contracts. In these arrangements, firms were engaging production workers on contract basis, as opposed to previous engagements where workers were employed on permanent and pensionable terms. In one of the case-study (Case Study 8), the respondent talked of how his *'firm had to close down temporarily and re-open after three months so that all workers would be recruited afresh and on contract as opposed to permanent basis.'* The objective of this closure according to this respondent *'was to give his firm room to renegotiate with workers without being seen as contravening labour law'* (Fieldwork, 2006).

## **6.5 Capitalisation and Ownership of Garment Firms in Kenya**

### **6.5.1 Distribution and Sources of Capital**

The start-up capital varied considerably according to the size and age of the firm. Large-scale firms have higher start-up capital than the small-scale firms. There was however no evidence of firms graduating from medium-scale to large scale, a finding that is consistent with Ferrand (1998). He found that garment firms in Kenya hardly grow from small to large scale and that there is a missing middle. Another finding was that recently established firms had a higher start-up capital than the old ones even when they were in

the same size category. The mean start-up capital was Kshs. 73 million, while the mean capital in 2005 was estimated at Kshs 163.10 million.

As Table 6.5 demonstrates, equity was the main source of capital for most of the garment firms in our survey. Of the 44 firms, 12 (27.3 per cent) were 100 percent financed through equity. Nearly 60 per cent of the firms had equity accounting for over 75 per cent of their capital in 2005, and only 5 firms (11.4 per cent) had equity capital of less than 50 per cent. This is consistent with other studies on garment which have indicated that most of the capital in the manufacturing sector was from families (Ikiara *et al.* 2002; McCormick *et al.* 2001).

Equity capital constituted the largest share of the capital in the garment industry. Family was the main source of equity accounting for 88 per cent (26 firms that indicated use of family equity). Another major source of equity was foreign capital, which for the 20 firms indicated having foreign capital. This constituted 85 per cent. Firms with a higher percentage of foreign capital were the export-oriented firms, especially those in the EPZ. Other domestic equities accounted for a small proportion of equity capital with an average of only 41.67 per cent.

**Table 6.5: Percentage Share of Equity in the Capital**

Share of Equity in Capital	Frequency	Percentage
0-25	1	2.3
26-50	4	9.1
51-75	12	27.2
76-100	26	59.2
Missing	1	2.3
Total	44	100.0

Source: Author's Fieldwork (2006)

The other form of equity was debt which on accounted for a small proportion of capital (29.87 per cent). Table 6.6 illustrates different sources of capital among garment firms in Kenya.

**Table 6.6: Sources of Capital**

Sources	N	Minimum	Maximum	Mean	Std. Deviation
Equity capital	43	25	100	78.69	19.88
Debt capital	31	5	75	29.87	17.24
Family equity	26	40	100	88.85	20.06
Foreign equity	20	15	100	84.51	28.23
Other domestic equity	12	10	100	41.67	31.79
Financial institution debts	34	0	100	63.38	6.25
Informal debts	36	0	0	0	0
Family debts	36	0	50	4.14	10.43
Friends' debts	36	0	0	0	0
Related business debts	36	0	90	15.69	24.24
Other sources of debts	35	0	85	6.61	19.51

Source: Author's Fieldwork (2006)

For most firms (88 per cent) equity was provided by family. This was common among the local firms which have strong family ownership and is consistent with Ikiara, *et al.* (2002). Out of the 36 firms that responded to this question, 21 indicated that their main source of capital was family; another 6 said that their main source of capital was 'other domestic sources; while 9 firms mentioned foreign sources as their main source of capital.

The distribution of this foreign capital was dominated by India (40 per cent ), followed by Sri Lanka (15 per cent); and then UK, Taiwan, Germany, United Arab Emirates (Dubai), and USA each accounting for about 7 per cent.

Of the debt-capital used in this industry, financial institutions accounted for the largest share (63.38 per cent) followed by related business (15.69 per cent). Family and other domestic sources accounted for only 4.14 per cent and 6.6 per cent, respectively. Incidentally, none of the firms indicated to have obtained debts from the informal sectors or friends. This evidence suggests that medium and large-scale garment firms in Kenya increasingly rely on formal sources of capital. There was also a high level of family owned businesses which depend on family sources of finance.

## 6.5.2 Ownership Structure of Garment Firms

The garment enterprises may be classified on the basis of ethnic racial and gender dimensions (Kinyanjui *et al.*, 2004). In reference to manufacturing sector Ikiara *et al.* (2002) note that many of the micro and small scale enterprises are owned by Kenyan of African origin. However, the share of African-owned firms falls sharply with increase in firm size while that of Asian ownership increases with enterprise size. European ownership is relatively small for all size categories, but Europeans own 20 per cent of all large scale manufacturing firms. This seems to mirror the structure of the garment firms in Kenya. The ownership pattern in garment industry shows a strong participation by a small Asian minority with less than one per cent of the population but a large share of manufacturing enterprises. Whereas Africans have ventured into manufacturing, not only have their operations been restricted to small, informal end sector, but also some of the initially large African enterprises have exited from manufacturing.

Himbara (1994) argues that the dominance of Asian in the manufacturing sector in Kenya can be traced to the entry of labourers brought in from India to build the Kenya-Uganda railway in 1880s and the Trade Act of 1967 that restricted trade by Asians in Kenya. Our findings reveal that ownership of most of the garment industry is dominated by Asians in both categories of local as well as foreign owned firms (see also Kamau, 2007). Among the export-oriented firms, FDI from Asia accounted for more than 80 per cent. The concentration of new Asian investment into the clothing industry facilitated by AGOA reflects some the long-standing trade and investment interests as well as the global competitiveness of Asian clothing companies. It is part of a broader engagement of Asia as a major driver of trade and FDI in SSA (Jenkins and Edwards, 2006). The FDI in the Kenyan clothing sector is mainly market-seeking and targets the US market under AGOA. It is for this reason that Phelps *et al.* (2008) conclude that the garment FDI in Kenya has low backward integration.

## **6.6 Production Activities, Subcontracts and Machinery Acquisition**

### **6.6.1 Garment Products**

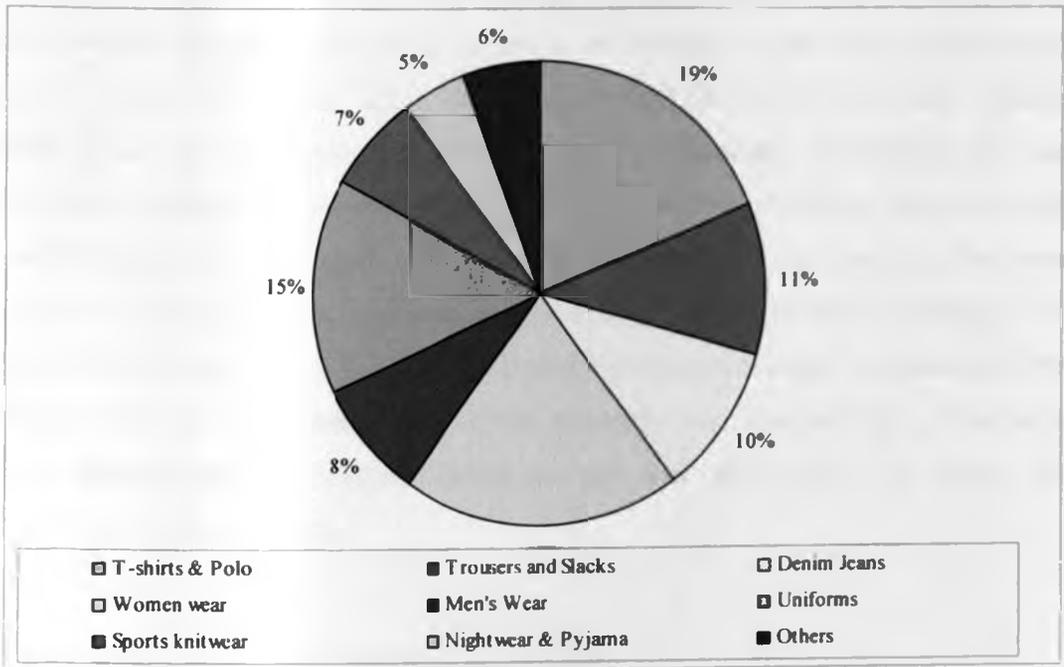
Within the clothing value chain, there are several distinct production stages: design sourcing of raw materials, production and delivery of the product to the retailer and customers. Nearly all firms in GVC were involved in production of garments while other activities were undertaken by buyers and/or their agents. Local

Garment products can be categorised broadly into two categories: knit and woven products. These two categories of garment production require different types of production processes, machinery and assembly lines. We found that some firms specialised in knit-wear while others specialised in woven wear. A few others combined both knit and woven even though each one of them was produced in a separate production line. Due to differences in machinery requirements, firms tend to specialise. The woven production on average required specialised skills compared to knit wear.

While knitwear designs remained constant for a long time than the woven garments whose fashions changed regularly hence necessitating regular upgrading of skills by workers. It appeared fashionable to be involved in production of woven garments. Most of the firms were particularly keen to produce jeans considered which were regarded as superior type of woven garment. Knitwear manufactured by Kenyan firms includes such products as T-shirts, polo shirts, track suits, and under garment, while woven products include men's shirts, trousers, suits, ladies' tops, ladies' trousers. More recently, a vast majority of the EPZ firms are involved in the production of jeans whose CMT value in the US market is higher than that of standard products. Three firms in our sample of the EPZ firms have specialised in jeans manufacturing while others combined jeans production with other types of garments.

Production of T-shirts and women wear dominated production lines of garment firms (see Figure 6.1). This is a multiple response of products that firms were producing and does not necessarily relate to the value or value of the garment. As mentioned earlier, most

firms were producing more than one garment product at a time. Besides the T-shirts and women wear, uniforms was another important category of garments. This included institutional uniforms, corporate uniforms and industrial uniforms in that order. As a proportion of all product mentioned, uniforms accounted for 15 per cent (Figure 6.1). Jeans and slacks accounted for 10 and 11 per cent, respectively. Sports wear and men's casual wear combined accounted 15 per cent of the mentions. A few firms indicated that they produced suits, kikoyis, undergarments and baby wear.



**Figure 6.1: Garment Products in Kenya**

*Note: Multiple Responses of Mentions of a Product by Firms*

*Source: Author's Fieldwork (2006)*

While a majority of firms produced for established retailers located in the US market, others were producing and selling in their own brand names. Sales value in the year 2005 was obtained for most firms, but it was not possible to apportion this sale value into different categories of products produced. More challenging was the fact that some firms gave their sale values in US dollars and others in Kenya shillings. In order to make use of this aggregated data, a common conversion rate was applied. Given this limitation the analysis of products is confined to mention products and not values or quantities.

Most of the garment manufacturing firms were not involved in textile manufacture – they bought all fabric, yarn and other raw materials from other independent firms.<sup>64</sup> There is only one local firm that reported to be producing fabric for its own use, otherwise, all the others sourced raw materials from other firms. Export oriented firms imported all their raw materials whereas; local firms combined imported with the locally manufactured raw materials. In line with previous studies, we found that in the EPZ firms, raw materials were bought from suppliers nominated by the buyer nominated supplier or was sent from parent company (Phelps, et al., 2009; McCormick et al., 2006). For the export-oriented firms, a vast majority of their textile suppliers were located in the home countries of the parent companies –namely China, India, Hong Kong, Taiwan and Sri Lanka. Although local firms were not constrained in sourcing of raw materials, increasingly, they were importing arguably due to costs, flexibility and availability. In addition to sourcing from neighbouring African countries these firms also import from Asian countries. The source of raw materials was also influenced by the buyer of the product, whereby, it was reported that some of the corporate clients tended to favour imported raw materials. Other buyers were not very keen on where raw materials were sourced from. Most of the respondents argued that imported fabric and yarn had better quality and cheaper than those manufactured locally.

## **6.6.2 Subcontracting in the Garment Industry**

Garment firms in Kenya are characterised by differences in production patterns. Some firms engage in full range production activities. Others, especially some of the large export oriented firms are cut-make and trim (CMT) contractors. In another previous study, a respondent described '*EPZ firms as glorified tailors: they do neither design work nor supply procurement*' (McCormick et al 2001:21). These firms are located within global commodity chains, which are characteristic of the global trade in garment production and retailing. Retailers located in developed world provide designs and raw materials required in production, and then contract developing country firms to manufacture garment on their behalf.

---

<sup>64</sup> The main inputs for garment producers in Kenya are fabric and yarn for woven and knitted garment, respectively. Other inputs include thread, buttons, zips, buckles, lace, lining, braids, elastic and facing materials.

The local producers in this chain cut and stitch the required garments which are then shipped to developed country's markets. Cross tabulation between the export platforms and subcontracting indicated that on average, 86 per cent of the EPZ, 65 per cent of MUB firms undertook CMT orders, while only 31 per cent of local firms relied on CMT orders. This implies that CMT activities are more prevalent among EPZ firms than in locally-owned firms. Being involved in the lower end activities of the value chains, CMT producers are unlikely to experience functional upgrading (Gereffi and Memedovic 2003; Bazan and Navas-Alemán, 2004). Marketing and design are important links in the value chains, particularly for branded garment products. These are the functions that belong to the strategic core of the supply chain and are usually undertaken by the lead firms in the global value chain linkages.

Most of the Kenyan garment firms are involved in sewing activities which constitutes the lower end of the garment value chain, similar to the findings by McCormick *et al.* (2006) and Phelps *et al.* (2008). Emerging evidence from our case studies establish that in global value chains, 'designs' were developed by the buyers (retailers) and the local firms are only expected to duplicate those designs. Buyers either directly or through agents sourced strategic raw materials such as fabric, threads, buttons and zips which were shipped to local producers.

Export-oriented firms in Kenya were involved in the cut-make-trim-pack (CMTP) production activities. Sourcing agents (mainly located in Asian countries), played a crucial role in connecting local producers with buyers in the US. Acting as the gate keepers, they were critical in identifying who suppliers of raw materials and garment firms were to carry out the actual manufacturing. In some cases, these agents acted on behalf of buyers to ensure that local producers adhered to the buyers sourcing ethics. This is in keeping with the finding by Gibbon (2000) in the case of Mauritius clothing industry, where sourcing agents were observed to be playing a crucial role in the supply chain management. A different picture is portrayed in the domestic or local segment of the industry. Firms in this category were involved in designing and procurement of most of the raw materials. All the firms in our sample undertook cutting, sewing and finishing.

### 6.6.3 Acquisition of Production Machinery

Equipment used by garment manufacturing firms in Kenya differed depending on the product lines as well as the size of the firm. Large scale firms particularly those in the EPZ programme had a wide range of modern and automated production machinery. Although information on machinery was inadequate, we found that most firms owned straight, double-needle machines, flat locks, feed of the arm, and over-locks.

Some firms had more specialised machines depending on the production activities. Most exporting firms had straight knife cutters, band knife cutters and end-cutter machines, spreading machine and mechanised marker-plotter. Records on the machineries in most firms were not properly kept and our analysis is limited to the type and quantity of machines in the firm. The survey had sought to collect information related to the number of each type of machines owned by the firm, year of purchase, buying prices, operation rate and replacement value but this kind of information was not readily available even from the case-studies. Since information of item by item was not available, our measurement of capital was limited to the total replacement value of all machinery in the firm based on the respondents' assessment.

Firms make greater use of electric and specialised machines. Some of the specialised machines found among these firms included overlocks, buttonholers, spreaders and embroidery machines. The differences in machinery translate into differences in quality and quantity of output. A firm that owns a specialised buttonhole machine can make higher quality buttonholes than one that uses ordinary household-type zigzag machine to make them (McCormick *et al.* 2001). Some firms overcome their lack of machines by subcontracting specialised work such as embroidery.

The sources and channels of machine acquisition varied considerably across firms (Table 6.5). Approximately, 43 per cent of the firms indicated that most of their machinery were bought in Kenya, another 25 per cent indicated that India was the main source of their machinery. Other sources included United Arab Emirates (UAE), Taiwan, China, and

Sri Lanka. The country of origin for machinery reflects the country of origin for foreign owned factories, whereas, for other firms, it was the most economic source of supply. In the UAE case, we found out that machinery bought here originated from other countries mainly Japan and China and that UAE was mainly a trading centre.

**Table 6.7: Country Where Most of the Machinery was bought**

Country	Frequency	Percent	Cumulative Percent
Kenya	19	43.2	43.2
India	11	25.0	68.2
United Arab Emirates	6	13.6	81.8
Taiwan	4	9.1	90.9
China	3	6.8	97.7
Sri Lanka	1	2.3	100.0
Total	44	100.0	

Source: Author's Fieldwork (2006).

Most firms (38 per cent) imported most of their machinery directly from dealers abroad. This was common for high-tech specialised machines and for most of the exporting firms. While foreign-owned firms relied heavily on their respective head offices to procure machinery, other firms sourced directly from dealers in foreign countries. Firms sourcing directly indicated that they used internet and referrals to identify suppliers of machinery. Ordinarily, a firm would get invoices and catalogue from many suppliers and buy from those sources deemed to be most economical.

Locally-owned firms bought most of their machinery from local dealers who imported parts and undertook assembly in the country (20.5 per cent). It is important to note that, this does not imply that the said machines were manufactured in Kenya. Instead, they were only assembled here. In our field work, respondents talked of a Juki and a Singer dealer located in Nairobi who were importing parts of sewing machines and assemble them and then retail complete machines to garment producers. Another mode of local acquisition of machinery entailed buying from EPZ firms. It was reported that when EPZ firms upgraded their production machinery they would dispose of the old ones to local garment manufacturers. In another case, local firms would buy machinery from local firms when they wound up their operations in Kenya.

Beginning 2004, local firms reported as having bought second-hand machines from local EPZ. What was not clear is whether local garment producers would pay for import duty for such machinery. None of the firm which had purchased such machines reported having paid import duty to KRA, perhaps an indication that the rate of depreciation for such machines is so high that by the time they being disposed of, the import duty is negligible. The other alternative is that could be the selling price included the import duty but buyers were not aware. What those who had bought such machinery indicated is that despite them being second-hand, the costs was less than 20% of what it a new such machine would cost. As shown in Table 6.6 there are also local importers (traders) of garment machines selling directly to factories in Kenya. This accounted for close to 20 per cent. Unlike local dealers who mostly assembled machinery in Kenya, importers (or traders) bring in complete machine ad their work is mainly import trade.

**Table 6.8: Acquisition of most of the Machinery**

Acquisition Method	Frequency	Percentage	Cumulative Percent
Direct Import	17	38.6	38.6
Local Dealers	9	20.5	59.1
Local Importers	8	18.2	77.3
Head Offices	4	9.1	86.4
Firms Winding up	3	6.8	93.2
Local EPZ Firms	3	6.8	100.0
Total	44	100.0	

Source: Author’s Fieldwork (2006).

Generally, EPZ and MUB firms mainly relied on imported machinery because of the import duty exemption on capital investments. Most of these firms import machinery directly while others depend on their respective parent companies. Although firms tend to specialise in one method when acquiring most of the machinery particularly when they are established, they combine several of these methods from time to time depending on the nature of machinery being purchased.

## 6.7 Market Destinations

Kenyan garment manufacturing firms participate in various markets: domestic and export markets. In our study, we sought to gather information on major markets that firms sold

their products to during the year 2005. The information about the market destinations assisted us in mapping value chains for the garment industry.<sup>65</sup> As Table 6.10 confirms, the US and Kenyan domestic markets constituted the largest share of market destinations.

Large-scale firms particularly those in the EPZ were exporting their products mainly to the US market. Locally-owned firms mainly targeted the domestic market, while others purposely strode the domestic and export markets. Our survey in line with other previous studies found out that participation in the export market by local firms was generally low.<sup>66</sup> Export-oriented firms were larger, capital-intensive, and with a higher productivity than other firms in the industry. This means that realising the export potential may require careful strategies on the part of the local firm. The regional market has potential, but the number of firms penetrating this market remains small (see also Figure 6.1).

The evidence shows that firms exporting to the US market focused only on this market, dramatising the AGOA trade preference. There were only four firms that exported to the European market but combined this with the domestic markets. Another category of five local firms sold in the African regional market. Finally, 17 firms sold their products in the domestic market only.

**Table 6.9: Distribution of Firms by Market Destinations**

	Market(s)	Number of Firms	Percent
1	Domestic only	17	38.6
2	Domestic and regional only	3	6.8
3	Domestic and European only	2	4.6
4	Regional only	0	0.0
5	Regional and European only	0	0.0
6	Domestic, Regional and European only	2	4.6
7	European only	0	0.0
8	US and European only	0	0.0
9	Domestic, US and European only	0	0.0
10	Domestic, Regional, US and European	0	0.0
11	US Only	20	45.4
	Total	44	100.0

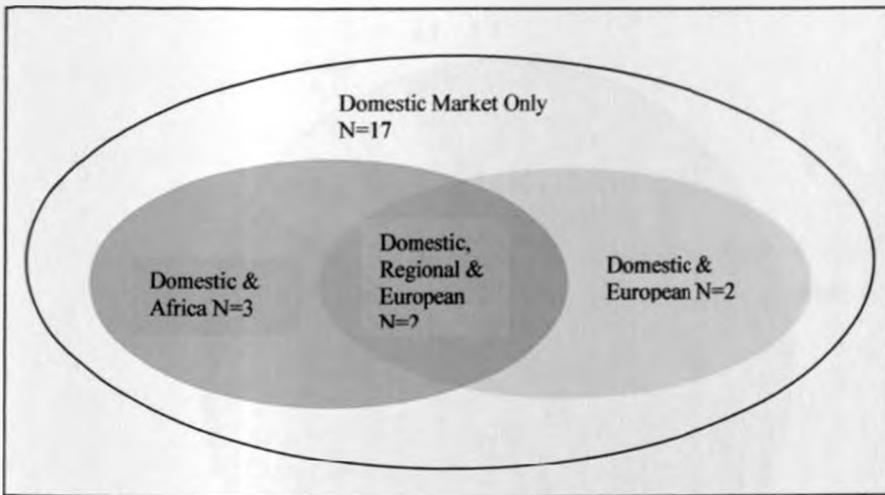
*Source: Author's Fieldwork (2006)*

<sup>65</sup> Literature on value chains indicate that one can map out a chain based on products or markets. In our case, we opted to use markets as the basis for differentiating value garment chains. See for example McCormick and Schmitz (2001); Kaplinsky and Morris (2002); and Gibbon and Ponte (2005).

<sup>66</sup> See for example McCormick *et al.* (2001) and McCormick *et al.* (2007).

From Table 6.10 and Figure 6.1, we observe that two firms are simultaneously involved in three markets namely, domestic, African regional and European markets. These firms displayed unique features and appeared to be performing better than all the others in the sample particularly on the basis of technical efficiency and upgrading as discussed in Chapters 7 and 8. Whereas other firms talked of down-scaling their operations, these two firms were in actual fact expanding. They were penetrating these markets through their own brands and were dealing with buyers at arms-length. In the domestic market, they were producing garments for the high-end consumers such as the tourist industry.

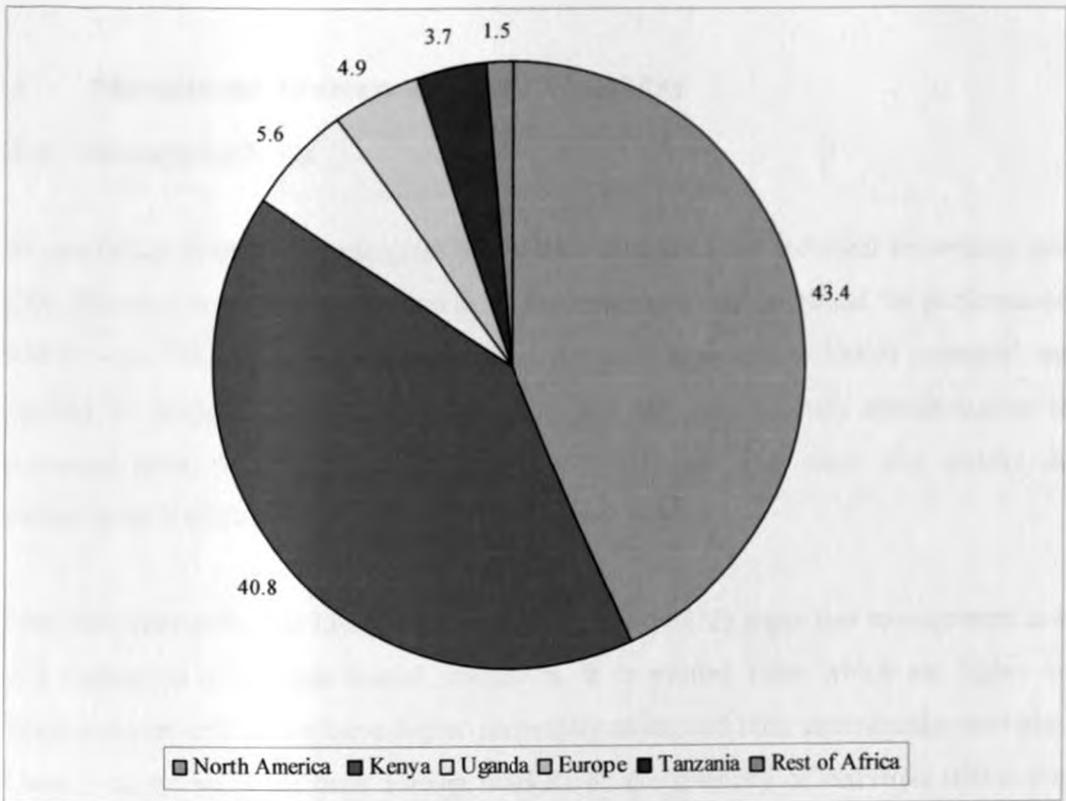
The pattern of the firms serving the US market is unique because these firms only focus on this market. Phelps et al. (2008:80) observe that this pattern is expected given that the recent growth of the industry was driven by AGOA. The strong focus on the US market, with no attempt to venture into other destinations is a pointer to the failure of the export-led garment industry to diversify markets. Ikiara and Ndirangu (2004) argue that reliance on only one market destination, in our case, the US is risky as it is driven by the US Government initiative under the AGOA whose sustainability is not certain. None of the local firms has attempted to export to the US market in spite of the AGOA preferences. This may infer to the governance structure which is favours mass producers and not the medium size firms with relatively small volume production capacity. The other reason could be lack of connection to the sourcing agents located in Asian who act as intermediaries between producers and buyers located in Kenya and the US, respectively. In this case, the firms with foreign ownerships are better placed for participation in the value chain leading to the US market.



**Figure 6.2: Market Destinations for Local Firms**

Source: Author's Fieldwork (2006)

In the survey, we asked firms to indicate at most four markets that each product in their production line was sold in 2005. Since most firms produced more than one products these mentions were multiple responses resulting to 267 mentions. It is important to put a caveat in this finding because it does not represent value of products sold in the respective market, but rather the mention of products going to specific market. This information is presented in Figure 6.3. It emerged that the North American market constituting the US and Canada accounted for the largest share of products' market destination (43.4 per cent). In fact the US market alone accounted for 42.7 per cent making it the largest single garment export market. This was followed closely by the domestic market which accounted for 40.8 per cent of all mentions. The East African market comprising Uganda and Tanzania accounted for close to 10 per cent (5.6 and 3.7 per cent respectively). Europe as a market destination accounted for less than five per cent of the product mentions (4.9 per cent). This reinforces our earlier assertion the US is the largest market for Kenyan garments. The other major market after the US was the domestic which absorbed more than 40 per cent of products.



**Figure 6.3: Market Destination by Country in 2006**

*Note: Multiple Responses – Firms' Mention of the Market by Products*

*Source: Author's Fieldwork (2006)*

Although, accounting for a small share of the Kenyan garment export, the diversity of the European and the African regional market indicates that there could be potential for Kenyan producers. First, participation in these markets is not driven by market access like is the case in the US market. Secondly, producers selling in these markets are exporting their own brands designed through collaboration between an importer/buyer and the Kenyan producers. As discussed in Chapter 7, this type of relationship (collaboration) between buyers and producers in these markets offers opportunities for producers to participate in design and marketing activities. This does not happen in the case of the value chain leading to the US market.

## 6.8 Management Structure and Skills Availability

### 6.8.1 Managerial Skills

The capability stock of an enterprise lies in the managerial and technical knowledge and skills. The quality of knowledge and skills available to a firm is critical for performance (Ikiara, *et al.* 2002). High level managerial, administrative and technical personnel are required to modernise the garment industry and the rate of such modernisation is associated with the stock and capability accumulation. The stock and quality of management is critical for upgrading in the garment industry.

In the internationalisation literature, Clercq *et al.* (2005: 412) argue that management is a good indication of entrepreneurial orientation. It is posited firms which are higher in entrepreneurial orientation have higher propensity to expand their cross-border activities in terms of the scope of their foreign markets or the intensity of activities within the foreign markets. Internationalisation' is paramount in the firms' upgrading process as it entails the search for new knowledge, and improvement of existing knowledge, skills and processes.

In our study, the management structure was represented by the most influential decision maker in a firm. The analysis of this variable reveals that managers in the industry are young and much more educated than in previous studies. More than half (54 per cent) of the influential decision makers were aged below 50 years and only 11 per cent were above 60 years old (see Table 6.12). The mean age of managers was 49 years with the youngest being 32 and the oldest 70 years.

**Table 6.10: Age of Influential Decision Makers**

Age	Frequency	Percentage
31-40	8	18.2
41-50	16	36.3
51-60	15	34.1
61-70	5	11.4
Total	44	100.0

Source: Author's Fieldwork (2006)

As demonstrated in Table 6.11, about 64 per cent of the managers had attained university education. This is in contrast to Ikiara *et al.* (2002) where a vast majority of managers had only secondary education. In our study, a majority (77 per cent) of the managers had post-secondary education.

**Table 6.11: Academic Qualification of Influential Decision-Maker**

Academic Qualification	Frequency	Percentage	Cumulative %
Lower Primary	2	4.5	4.5
Primary (KCPE)	1	2.3	6.8
Secondary Education	7	15.9	22.7
College – Diploma Education	6	13.6	36.4
University	28	63.6	100.0
Total	44	100.0	

*Source: Author's Fieldwork, 2006*

Majority of the managers had long experience in garment manufacturing activities. Nearly 80 per cent of them had at least 10 years of experience in the garment manufacturing. Most managers (75) had worked for the same firm for a long time. In one case, a respondent had had worked in the same firm for more than 25 years, rising through ranks to become the managing director. This may imply that at management level, experience in garment production activities was highly regarded. The average years of experience was 12, implying that the turnover at the top management level was low.

Only 20 per cent of the top managers had joined the industry with experience from other sectors or industries. Most firms in our sample had organisational systems with hierarchical levels of authority and responsibility and relationships between different departments. In most factories, particularly the export-oriented ones, they displayed an organogram showing various departments and their hierarchy of command. It was not clear whether this was one of the requirements by the buyers or it was organisational initiative.

More than half (55.6 %) of influential decision makers in the industry were Kenyans, while the rest were foreigners (44.4 %). Among the Kenyans, those of Asian origin dominated the industry with 70 per cent, while Kenyans of African origin accounted for only 30 per cent. This is in keeping with Himbara (1994) who in the case of large-scale

manufacturing in Kenya established that, “the Kenyan-Indians were the dominant in most of the manufacturing activities.” The category of foreign-owned garment firms, Indians dominated followed at a distance by Chinese, Sri Lankan, Britons and Germans (see also Phelps, *et al.* 2008:77).

## **6.8.2 Labour Skills and Productivity**

The proportion of employees with secondary education used in other studies as proxy for skills (Ikiara *et al.* 2002), shows that on average 67 per cent of workers in the garment industry had secondary education with a standard deviation of 17.73. In line with McCormick *et al.* (2007), our study finds an acute shortage of specialised skills in garment manufacturing, particularly the technical personnel.

The overall view expressed by the management of several firms particularly the foreign-owned was that Kenyan workers were not as productive as those in China and India. According to them Chinese workers were three times productive than Kenyan workers and this adversely affect Kenya’s competitiveness in the global market which is dominated by China and India. Similar sentiments have been echoed in earlier studies which claimed that the average Kenyan worker required five years of extra training before attaining the productivity level of Chinese worker (Ikiara and Ndirangu, 2004; Phelps *et al.* 2004). A respondent (Case Study 10) suggested that while Kenyan workers were second only to those in Mauritius, in the African regional context, they were only two-thirds as efficient as those in China, Bangladesh, India and Sri Lanka.

Training is a necessary condition for improvements in garment enterprise performance (Nordås, 2005; World Bank 2007; Teal, 1999; Ikiara *et al.* 2002). Moreover, improvements in the mechanisms for transferring technology and in technological competence are important in promoting industrial upgrading. The technical know-how generally accumulates slowly through continuous learning and innovation (Ikiara *et al.* 2002). We sought to gather information on firms’ expenditure of training, research and development. Evidence suggests that training was not given adequate attention in most of

the firms. Where respondents indicated that training was provided, it was limited to the on-job and induction training. Only 30 per cent of the firms indicated to have such formal training schemes for their employees. The EPZ firms depended on expatriate workers to train local staff who then take up their responsibilities when they leave. However, this transition was generally low.

Local firms, particularly those involved in export, seem to be more aggressive in securing training for their staff than the foreign-owned firms. We found out that two firms were collaborating with their international buyers to get training for staff in the designing sections (Case study one and six). Although respondents were of the opinion that training was important for their performance, they argued that the state needs to take up leadership to establish training institutions from which factories would employ.

On research and development, only three firms (6.8 per cent) reported having spent some of their money this, but even then, the amounts were dismally low, with a mean of KShs. 300,000 per year in 2005. This finding is consistent with the previous studies which found that most of the manufacturing firms in African countries do not spend money on either training, research and development (Bigsten et al., 2004, Ikiara et al., 2002, Lundvall and Battese 2000). None of the firms in our survey had ever conducted a market survey.

## **6.9 Constraints Facing Garment Enterprises in Kenya**

Respondents were asked to indicate major constraints their firms were facing by virtue of operating in Kenya. These responses are categorised into broad issues and summarised in Table 6.12. Each of the 44 firms was asked to give four responses on the challenges that they faced. These responses were not ranked in any order of importance by the firms but they all featured as the most significant challenges confronting them.

**Table 6.12: Constraints Facing Garment Firms**

	<b>Constraint</b>	<b>Responses</b>	<b>Percentage of Cases</b>
1	High costs of production <i>(electricity, labour, transport, credit, communication)</i>	31	70.5
2	Competition <i>(cheap imports, second-hand clothes, China &amp; India the export markets, shrinking domestic demand, raw materials)</i>	28	63.6
3	Poor infrastructure <i>(road, railway, water, public services, institutional failures)</i>	23	52.2
4	Lack of government support <i>(policies, local firms, exchange rate, neglect, dialogue, channels to air grievances, KRA, KEBS, NEMA)</i>	21	47.7
5	AGOA uncertainty & MFA termination <i>(Rule of origin, backward linkages, China &amp; India, footloose FDI, price squeeze by buyers)</i>	16	34.0
6	Bureaucracy at the port <i>(delays in customs clearance, corruption, inefficiency, congestions)</i>	13	29.5
7	Power failures, surges and blackouts <i>(unreliable power supply, generators, surges)</i>	13	29.5
8	Labour related issues <i>(costs, Trade unions, industrial unrests, well-trained, regulations, policies)</i>	11	25.0
9	Insecurity <i>(factories, transits, access by buyers, robberies)</i>	7	15.9
10	High taxation <i>(Tax rates, tariffs, upfront taxation)</i>	6	13.7
11	Lack of adequate local materials <i>(quantity, quality, reliable supplies)</i>	4	9.1
	<b>Total</b>	<b>174</b>	<b>N/A</b>

*Note: Multiple responses by respondents*

*Source: Author's Fieldwork (2006)*

Concern over high production costs is widespread across the whole manufacturing sector in Kenya and not just within the clothing industry and it remains a chronic challenge for the industry. Over 70 per cent of the firms identified production costs as their main challenge specifically, the costs of electricity, labour, transport, water and communication. This is consistent with other studies notably Phelps *et al.* (2008) and Bigsten and Kimuyu (2002). Production costs issues appear to cut across all garment manufacturing firms irrespective of the export platform. Labour cost was identified as the single most important cost factor in the industry accounting for almost 30 per cent of total production costs.

The concern about the high wage rate was more acute in export-oriented (EPZ and MUB) firms than in the local-firms. This could be attributed to the fact that majority of firms in this category were not directly involved in procuring raw materials which from other quarters would account for a big share of costs in garment production (World Bank, 2007:59). Moreover, respondents alleged that wages for operators in the Kenyan garment industry had increased by an average of 17 per cent between 2004 and 2006. Emanating from high costs of production, competitiveness of Kenyan products both in the domestic as well as export markets remains a challenge to a vast majority of firms (63.6 per cent). For firms in the domestic market, respondents identified cheap imports from Asian countries as major threat, followed by influx of second-hand clothes. Lack of raw materials in Kenya and shrinking domestic demand posed challenges.

For firms in the export market, concern about the competition posed by China and India (Asian Drivers) in third market – US market was worrisome. Most of the firms in this category, were contemplating closing down due to among other things lack of competitiveness in the US market following the MFA termination. The survey results revealed that the enactment of AGOA has been influential in the revival and development of the garment industry. Respondents, particularly those exporting to the US market expressed concerns about the uncertainty of the derogation of the rule of origin which at the time of this fieldwork was set to end in September 2007. This uncertainty was exacerbated by the termination of the MFA beginning 2005 which saw China and India surge their exports to the leading world markets.<sup>67</sup> Firms exporting to the European and African regional market were concerned about the threats posed by China and other leading world producers in the world markets. Although a vast majority of them were seeing themselves as operating in niche markets, they were worried about competitiveness which was being eroded by high costs of production.

Poor infrastructure was identified as challenge by more than half of the respondents (52.2 per cent). This was a concern for all firms both exporting and non-exporting. This related to dilapidated road transport, lack of reliable railway transport and lack of direct flights to

---

<sup>67</sup> See also McCormick, *et al.* (2006), Munir and Dinora (2008), World Bank (2007), and Phelps *et al.* (2009).

the US. Costs and provision of water is a thorny issue affecting performance of garment factories. Institutional failures were also major concern to garment firms. Lack of clear policies regarding garment industry operations is a major threat to the performance of the industry. Almost 50 per cent of respondents felt that the government was not supportive of the industry in spite of the role it played in the Kenyan economy.

Other challenges facing the industry include insecurity, inefficiency at the port of Mombasa, high costs of credit, high taxation and lack of adequate local raw materials. The World Bank's Investment Climate Assessment for Kenya highlights how competitiveness is undermined by high indirect costs, with the main barriers being corruption, insecurity and infrastructure (World Bank, 2007). The key infrastructure barriers are poor transport, the high costs and unreliability of power services and costly and poor quality of fixed-line telephone services. In the same line, Brenton and Hoppe, (2007) conclude that these costs undermine the advantages that Kenya possesses in terms of low cost, relatively well-educated labour; they depress productivity and constrain investment.

Kenya also suffers from long lead times on imports of raw materials and exports. It is located far from the main market (the US-taking 35-40 days to ship from Mombasa to the US) while, at the same time, the country is distant from its sources of raw materials (South East Asia). Most firms complained about the inefficiency at the port of Mombasa which is the gate way for importing raw materials and also exporting garment products. One firm reported that it had been forced to airlift a consignment after being delayed at the port and the order was to be cancelled if not received on time.

## **6.10 Conclusion**

This chapter has elucidated the diversity of the garment industry, particularly with regard to EPZ, MUB and local firms. The discussion has shown that size, age, production and market orientation for garment firms differ across firms based on the export platforms. Table (6.13) summarises important performance indicators of the garment industry in Kenya. The mean value-added was Kshs. 106 million with a standard deviation of Kshs.

142 million. This implies that most firms in the industry generate sizeable output from the inputs employed.

Turning to the capital as represented by the replacement value of all equipment, we find that the mean capital was Kshs. 90 million with a standard deviation Kshs. 97 million, implying that on average, garment manufacturing firms employed large amount of capital. Labour represented by annual wage bill was high with a mean of Kshs. 45 million. These variables compare well with those found in other studies (Lundvall, *et al.* 2002; Bigsten *et al.*, 2004). The mean age and size of the garment firms were 16 years and 468 employees, respectively. On average, firms used about 70 per cent of their installed capacity which is higher than in other similar studies and may imply high levels of efficiency in the industry (see discussion in Chapter 8).

**Table 6.13: Summary Statistics of Key Variables**

	Mean	Std Dev	Minimum	Maximum
	<i>N</i> = 44			
Value Added (Kshs. Millions)	106,433.03	142,482.12	3,055	562,871
Capital (Kshs. Millions)	90,075.99	97,095.38	800	400,000
Labour Costs (Kshs. Millions)	45,844.82	61,096.09	1,500	258,399
Firm Age (Years)	16.16	17.25	1	84
Firm Size (No. of Workers)	468.52	612.53	20	2,300
Export (%)	52.98	45.87	0	100
Managers Skills (Years)	18.66	9.57	3	41
Africa (Dummy)	0.25	0.483	0	1
Foreign-Ownership (%)	38.41	46.52	0	100
Capacity Utilisation (%)	70.23	12.94	40	90
Female Employees (%)	65.33	24.21	9.52	97.73

Note: The values of value-added, capital and labour are expressed in thousands of Kenya shillings as valued in 2006. Other variables are as defined in Chapter Five.

Source: Author's Field work (2006)

Based on the industry analysis presented in this chapter, we now turn to examine how industrial upgrading is structured in Chapter seven as well as the nature of technical efficiency in Chapter eight. In this analysis, we are interested in understanding whether insertion in different value chains has implications for upgrading and technical efficiency.

## CHAPTER 7

### INDUSTRIAL UPGRADING BY KENYAN GARMENT FIRMS

#### 7.1 Introduction

This chapter analyses different value chains found in the Kenyan garment industry based on the main market destination of the products.<sup>68</sup> The study reveals the existence of four separate garment value chains in Kenya, namely, the US market, the European market, the African regional market and the domestic market. The structure and governance of these value chains differ and hence provide opportunities for local firms to upgrade. Industrial upgrading being a central issue in this study, the author first presents a systematic map of each of these chains and then compare different types of chain governance and the upgrading experienced by local firms.

#### 7.2 Structure of the Garment Value Chains in Kenya

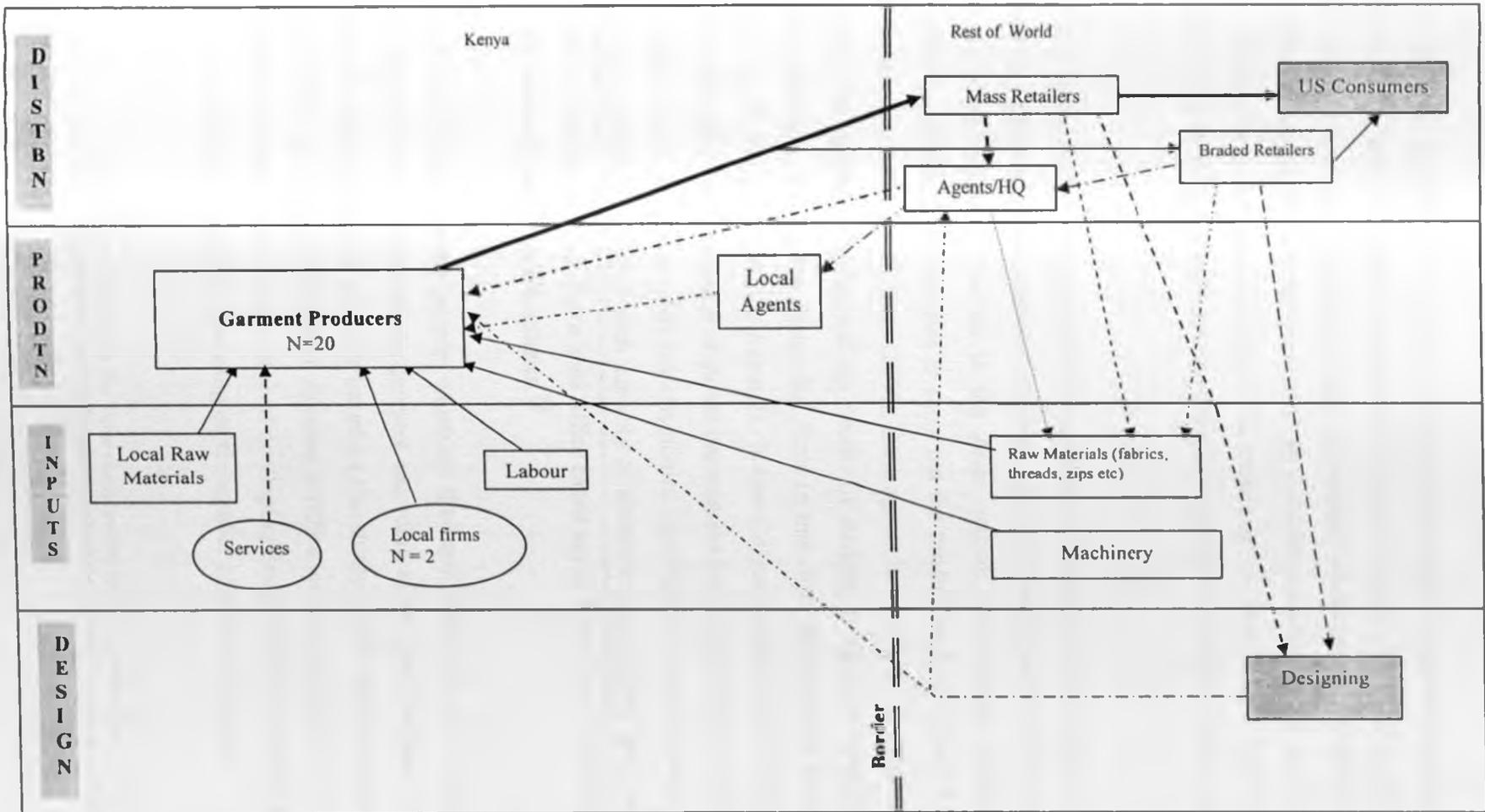
##### 7.2.1 Value Chain Leading to the US Market

The US market is the main export market for Kenyan garment products accounting for 85 per cent of all garment exports in 2006. Twenty of the 44 firms in the survey were inserted into the value chain feeding the US market (Figure 7.1). This comprised sixteen EPZ and four MUB export-oriented firms, exporting 100 per cent of their output. The US market is undoubtedly the leading export market for Kenyan garments. In 2006, garment products worth US\$ 264 million, accounting for 85% of total garment exports were destined for the US market.<sup>69</sup>

---

<sup>68</sup> Another way of analysing value chain is by the products (see Kaplinsky and Morris, 2002; Kishimoto, 2004).

<sup>69</sup> Between 2002 and 2007 it was estimated that the US market on accounted for almost 88% of garment exports per year (Kenya, Economic Survey, 2008).



**Figure 7.1: The US Market Value Chain Map**  
 Key: PRODTN – Production; DISTBN - Distribution  
 Source: Author's Fieldwork (2006)

The value chain map (Figure 7.1) shows the flow of garment production activities and some of the key actors in the US chains. The vertical movement represents four main activities of input-output structures namely, designing, inputs acquisition, production and distribution, while the horizontal movement indicate location of these activities between Kenya and the rest of the world. Out of the four major activities of the value chain, it is only the production (assembly) that takes place in Kenya. The rest of the activities are largely handled by actors located outside Kenya.

The chain begins with buyers or retailers based in the US developing the design and samples of the garment. These are then passed to sourcing agents or head-quarters (for some of the EPZ firms) most of which are located in the Asian region. The sourcing agents assume the responsibility of identifying factories to carry out the production and at times the suppliers of raw materials. According to Gibbon (2000), these agents have evolved to become supply chain managers. The agents then forward the details of designs to factories intended to provide assembly activities. Among the agents that firms in this chain mentioned as having dealt with included Li & Fung, Worldwide Apparels, In-true-Colours, Connor, and MES (UK) in that order. Increasingly, the importance of global commission buying agents has been growing since 1990 when buyers sought to shift responsibilities upstream for more services, whereas the number of upstream companies with capacity to absorb these functions was limited. In case samples and designs are passed to a head office based say in China, then this office would then distribute the work among its subsidiaries.<sup>70</sup>

Factories would then replicate samples which are then sent to the buyer to verify that the firm has the capability to manufacture the garment according to the specifications. This marks the first stage of confirmation of an order based on the ability of the factory to produce the said garment. Before an order is confirmed, rigorous certification of the factory by the buyer or his appointed agents takes place. At this stage of developing designs, the only activity by factories in Kenya is to duplicate sample(s), depending on the number of items in the order.

---

<sup>70</sup> Nearly all local the garment firms inserted in the value chain leading to the US market have their ownership rooted in Asian countries and their establishment in Kenya is attributable to the MFA regime as discussed in Chapter 2 (see also Phelps et al. 2008).

Sourcing of raw materials is an important activity in garment value chain in which buyers either directly or indirectly determine the procurement process of key raw materials. In this value chain, buyers are key actors in the sourcing of nearly all raw materials. Directly, buyers negotiate with the supplier of raw materials who ship them to manufacturers based in Kenya. In the indirect method, buyers approve suppliers of raw materials such as fabric, yarn, threads, buttons and zips and the producer is given this list to negotiate with any of the approved suppliers for raw materials. In this case, the buyer pays the supplier of raw materials directly, whereas the local producer in Kenya is only paid for CMT work. In other words, the buyer enters into a separate contract with the supplier of raw materials and the producer. The local producer in Kenya is therefore paid for assembly work. For some US buyers, the sourcing of raw materials includes items such as labels, hangers and price tags which are fitted into the garments prior to packing and shipping.

While most of the raw materials for firms in this chain are imported from Asian countries, there are few which are sourced in the Kenyan market. However, our field work established that these inputs are largely packaging materials. One of the key incentives for these firms to operate in Kenya is low cost labour. As discussed in Chapter 6, labour in Kenya is less costly than in most of Asian countries. Moreover, the proportion of expatriate workers in this industry was shown to be relatively small even in comparison to other SSA countries (McCormick, *et al.* 2007). We found that most of the production labour for firms inserted in the US market is largely sourced in Kenya.

There were two local firms which provided specialised skills to garment products by EPZ firms. These local firms were mainly getting subcontracts for embroidery, sand-blasting and/or stone-washing. Even if the proportions of material inputs sourced from Kenyan suppliers are low, there was greater use of business service inputs. According to Phelps *et al.* (2008) foreign garment firms spend about a quarter of their total expenditures on business services in Kenya. These services included provision of management consulting, auditing and accounting, raising finances, insurance, legal as well as banking services. Firms also purchased various technical business services such as engineering, structural layouts process engineering and internal control systems

for efficiency from local suppliers. Others sourced their computing and IT support requirements locally.

It was reported that in order for firms to compete and qualify for larger orders from well-known retailers, they had to meet certain criteria, which included providing audited accounts by recognised firms for five years, in addition to usual capacity criteria (Case Study 8, 2006). Some buyers in this chain appointed local consulting firms to monitor production of their orders in Kenya. These consulting firms act on behalf of international buyers to ensure that production specifications are strictly adhered to. As pointed earlier, the US buyers tend to have a more exacting certification process, insist on the use of approved suppliers 'for everything except polybags', take much larger proportions of suppliers' capacity, provide much more detailed production specifications, demand much more detailed QC, more exacting laboratory tests and much more frequent updates on the product's 'critical path' (Gibbon, 2000:16).

Production machinery by firms in this value chain was imported as shown in Figure 7.1. However, unlike in the acquisition of raw materials, buyers appear not to play a significant role in determining the sources and suppliers of machinery. In other words, producers are free to source their machinery from their preferred sources. Most of the firms in this value chain used modern technology in their production processes. Firms in our case studies had this to say about their production technology (Box 7.1).

### **Box 7.1: Respondent's Opinion about Technological Level in the Firm**

"The global garment industry is very competitive and as exporting firms, we have to ensure that our production technology matches those of China and India. We therefore use latest technology in our production process, in order to meet quality standards set by our ever demanding customers" (Case Study 10, 2006).

"Our parent company ensures that our production technology in knitwear is at par with the global trend. The parent company ensures that all subsidiaries embrace latest technology in production" (Case Study 7, 2006).

"The managing director of our company visits Asian countries on regular basis to see the kind of technology in use. We as a firm invest heavily in production technology to remain competitive in this industry" (Case Study 8, 2006).

"Technology advancement in this industry is driven by the buyers who always demand high quality products. As such we have ensured that our technology is at the top" Case Study 9, 2006)

Source: Author's Field Work (2006)

Scholars have suggested that in GVC buyers (global lead firms) always go to the trouble and expense of setting up and supervising supply chains due to 'product definition' and 'risk of supplier failure' (Schmitz, 2006; Gereffi, 1999). In this value chain, we found that during the production process, US buyers in addition to several certification processes, require the factory to provide detailed production specifications, quality control and frequent updates on the product's critical path. Buyers regularly send their engineers, quality controllers, and auditors to the factory to assess the extent to which the firm was adhering to the buyer's ethics of sourcing code. Auditing is done on the overall working conditions, labour issues, payrolls and many other facets of the factory.

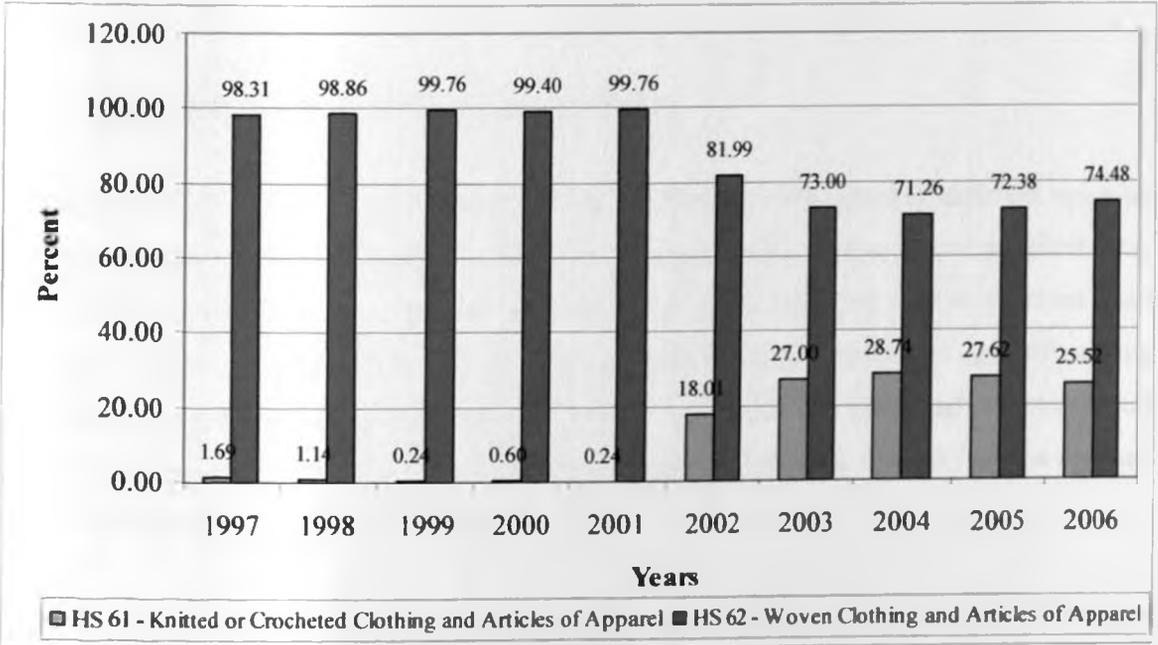
Some international buyers use accredited auditors in Kenya or in South Africa to carry out routine audit on their behalf upon which they file reports with the respective buyers. One of the local firms used by international buyers was the local branch of SGS, which is a local branch of an international quality standard certification company. More crucial, before any shipment is done, a representative of the buyer ascertains that product specifications have been met by the producer. In this chain, finished products are shipped directly to the buyer, even where agents are in charge of an order. Gereffi (1999:40) identified four main categories of buyers in the US: cost-

driven discount retailers (Wal-Mart, Kmart, and Target); upscale branded marketers (Liz Claiborne Ralph Lauren, Tommy Hilfiger); Apparel specialist stores (The Limited, The Gap); and the burgeoning private label programs among mass merchandisers (JC Penney, Sears, Levis Strauss, Russell, Hager). Evidence from Kenya shows that garment firms produced for discount retailers (account for 65%); followed by apparel specialists (20%) and only in a few isolated cases were other retailers mentioned. The US buyers tend to be much more hands-on in the production process and exerted control over producers, agents as well as producers. One producer in Mauritius was quoted saying *'when you work for the American buyers you really feel much more as if you are in a chain... you give up a lot of your independence... they get to know everything about your business that there is to know'* (Gibbon, 2000:16). In Kenya, similar sentiments were expressed about the many demands by the US buyers. A respondent had the following to say about the US buyers, *" the US buyers wanted to get the best quality and pay the minimum costs possible ... they want our factories turned into five star hotels...and still squeeze our meagre income"* (Fieldwork, 2006).

Once production of an order is completed, garments are then sent to the buyer directly by the producing firms. Over 95 per cent of the firms in this chain mainly ship products to the buyer by sea and therefore the port of Mombasa is critical in this value chain. One firm indicated that it was air-freighting goods to the buyers because it was dealing with relatively small orders. A vast majority of the firms in this chain indicated that they were doing orders for large retail chain stores in the US. Only in isolated cases did firms in this chain do limited orders for branded retailers (see Figure 7.1). At the end of the chain, mass and branded retailers distribute garment products to various consumers in the US market.

The US value chain is dominated by woven garments as shown in Figure 7.2. Between 1997 and 2001, woven garments on average accounted for 99 per cent while knit garments were only 1 per cent. However, the trend seems to have changed slightly after 2001 when knit garments started picking up. Its share in total garment exports increased from 18 per cent to a peak of 28 per cent in 2004 but again started declining up to 25 per cent in 2006. On average, between 2002 and 2006 woven garment constituted 74 per cent of exports to the US market while knitted garment was 26 per cent.

The composition of garment products to the US market is shown in Figure 7.2. It is clear that garment exports to the US are dominated by woven garments. This has an implication on the competition that Kenyan products face in the US market from producers in China, Bangladesh and Mexico. Between 1997 and 2001, woven garments accounted for 99 per cent of garment exports and the knitted only one per cent. This pattern appears to have changed slightly for the period 2002-2006 when knitted garment exports seem to have increased to about 26 per cent on average and woven 74 per cent. This represents the dollar value of imports and perhaps a different pattern would be displayed by the quantity. My argument is that export of say t-shirts to the US market is to the very low-end market and therefore the value is low even though quantity might be high.



**Figure 7.2: Share of Knitted and Woven Clothing Exports from Kenya to the US**  
 Source: Calculated from US ITC-OTEXA and Strategies

According to Tewari (2006:2335 ff) India's success in the global apparel trade has been fuelled by its concentration in knitwear products where firms have moved to design-intensive export

niches, as a way to get out of direct price competition with volume-based Chinese producers.<sup>71</sup> A case is reported of one firm in Tiruppur that shifted from turnover business in woven, citing threats from large-volume producers from China and Bangladesh, to fashion-based women's and girls' tops and clothing which had a predominance of handcrafted finishes and complex operations (embroidery, sequins, and labour intensive processes). By so doing Tewari (2006) reports that the profit of this firm increased to over 35% from 5% between 2003 and 2005. In the US market, Kamau (2007:13, Table 6) shows that Kenya is facing stiff competition from China in woven garments. Similarly, the recent comeback by Madagascar in the European market has largely been driven by knitted garments as opposed to woven. From this analysis, we can argue that there is need to intensify exports of design –intensive knitted garments in the US market whereby large volume producers are not threats.

## 7.2.2 Value Chain Leading to the European Market

Other buyers from the developed world (mostly in Europe) have adopted different sourcing practices from those of the US buyers. Differences arise mainly in the nature of relationship between buyers and producers, the size of orders and the control that buyers exert on local producers. Figure 7.3 presents a value chain map that shows the distribution of activities among the main actors in the European value chains. Our results revealed that European buyers were not sourcing for mass production and were therefore dealing with relatively smaller firms as opposed to those firms producing for the US market.

None of the EPZ and MUB (large- to very large-scale) firms were producing for European market. The European buyers sourcing from Kenya were not large scale retailers like Marks & Spencer but small and medium sized overseas buyers (importers, buying agents, wholesalers and speciality shops) with distribution outlets in European countries.<sup>72</sup> This is consistent with Tewari (2006:2335) who in the case of India found that producers were linked to a diversity of small buyers and this prevented the early “Wal-Martization” of India's apparel sector – the overdependence of suppliers on powerful buyer-driven chains where price competition is most

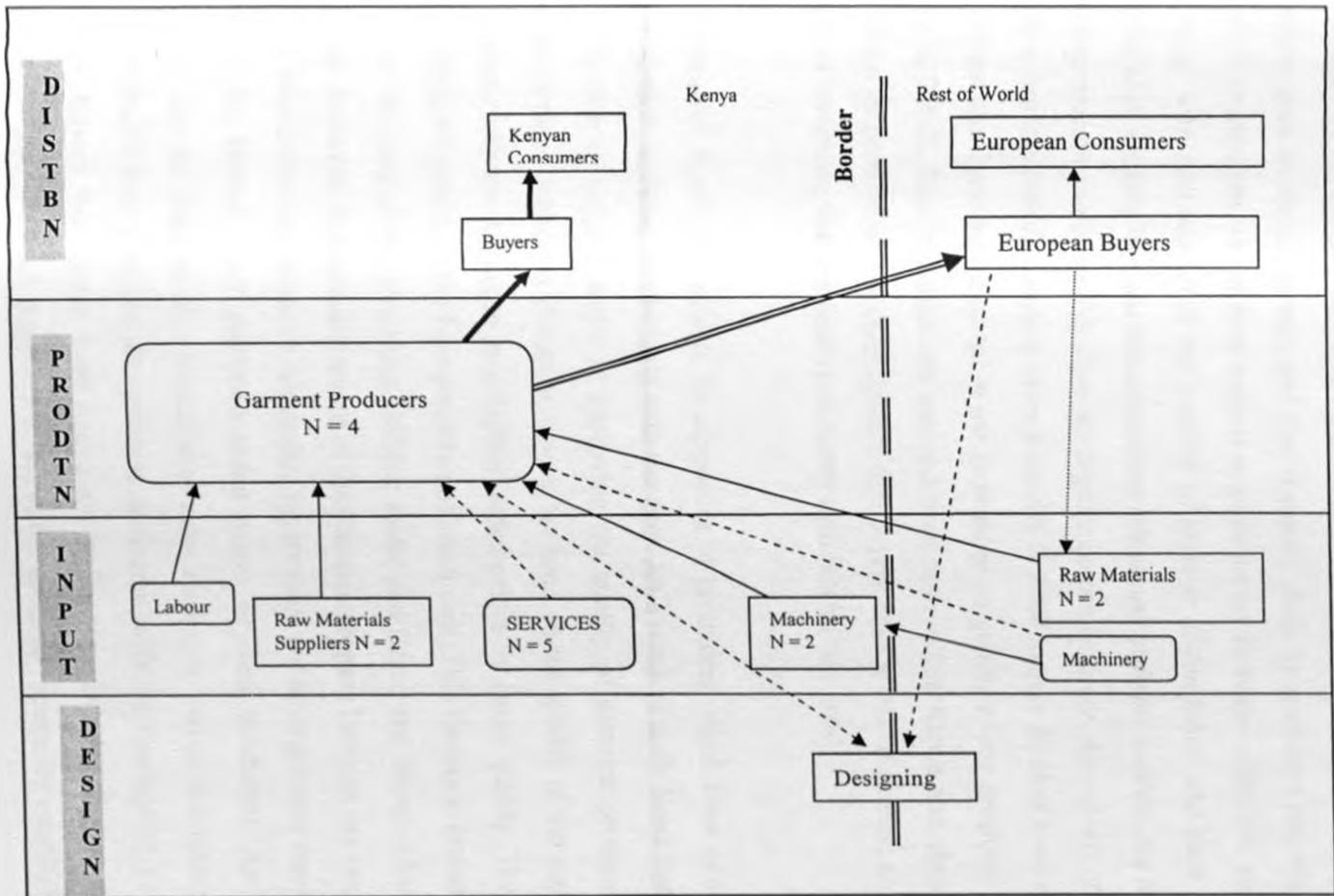
---

<sup>71</sup> See also Dolan and Tewari (2001).

<sup>72</sup> Edin was mentioned by two firms in this chain as a strategic importer for the European market.

fierce, and where the division of labour is such that small suppliers are often stripped of their functions other than narrow assembly while large foreign buyers absorb value adding functions such as design, pattern making, branding, sourcing of fabric, accessories, and input supply.

As Figure 7.3 confirms, there were four local firms that were producing for the European market, which were incidentally combining export with the domestic market. This is in contrast to those in the US value chain that concentrate on only one market. In the domestic market, these firms were selling to the high-end markets. The fact that only four firms were serving the European market is not surprising given that Kenyan exports to this market have been on a declining trend since the mid-1990s. This can be attributed to lack of preferential market access for garments originating from Kenya at the moment. In spite of this declining trend, the European market remains the Kenya's second largest garment export destination after the US. The description of the value chain activities is similar to the one presented in section 7.2.1 whereby the vertical movement represents the input-output structure while the horizontal movement represents the geographical location of these activities.



**Figure 7.3: The European Market Value Chain Map**

*Source: Author's Fieldwork, 2006*

Designing of garments in this chain is mainly done by producers but with consultation from buyers. As shown in Figure 7.3, design is a joint effort between producers and buyers. This study established that many of the buyers and importers (usually small and medium sized) that Kenyan producers worked with welcomed design inputs from their suppliers (even if simple), and encouraged an enlargement of the supplier's tasks and capabilities. In this chain, the use of intermediaries is minimal as buyers prefer to work directly with producers. Sourcing of raw materials such as fabric, threads and zips is mainly done by producers but with inputs from the buyer. A respondent whose firm exports organic cotton knitwear to the UK reported that, *"it is the buyer who first identified the supplier of organic cotton fabric and then linked us to him. Prior to this, we our firm was manufacturing kikoyis and ordinary t-shirts, but this buyer assisted us to improve on quality and designs for organic cotton knitwear. As a result of this relationship, our firm has expanded its export share from 5% in 2000 to over 20 % of total sales in 2005. The buyer has also been instrumental in our improving on quality of our products generally"* (Case Study 6, 2006). Raw materials are sourced from both within Kenya and abroad, mainly at the discretion of producers. The only concern that buyers have is that of quality; and sometimes they would an assurance that the quality of inputs such fabrics was good.

The European buyers are said to be supportive of producers' capabilities and establish cordial and long term working relationship with the firm. As a result of their direct linkage with buyers, they are able to suggest ways of improving the quality of garment products based on what consumers need. Although European buyers are keen on the quality of the products, just as the US buyers, they are willing to pay slightly higher prices for better quality. The US buyers were said to demand quality at the best possible minimum cost. This finding is consistent with Gibbon (2000) in the case of the Mauritius clothing sector and Bazan and Navas-Alemán (2004) in the Brazilian footwear. A major difference of the European buyers between the two previous studies and this one is that according to this study, buyers were not having goods manufactured in their own brands; instead, they marketed brand names of local producers. As a result Kenyan producers are not feeding into hierarchical value chains in Europe but rather penetrating this market through their own brands, which is consistent with the findings of Tewari (2006). The European buyers that source from Kenya are inclined towards building mutually dependable longer term ties with their suppliers to avoid the costs of repeatedly establishing new reliable

supply relationships. Firms in this chain reported having dealt with one buyer for ten or more years. These long term relationships facilitated feedback and tutelage, all of which are important features for exchange and learning. One of the respondents reported that his firm had been dealing with one UK-based firm since 1995, and that the same buyer often sends quality controllers to train workers and advise on how to improve quality in the production process. In as far as the European buyers were keen on quality; their quality control at the production stage is less extensive. Overall, respondents in this chain reported that buyers allow firms to make independent decisions on matters of production and procurement of inputs.

European buyers have a different way of managing their supplies, and they seem to give local producers the freedom to procure inputs from whatever sources as long as the expected quality and standards are met. Firms serving this market use machinery from both within and outside Kenya, especially where specialised machines cannot be sourced locally. Although these firms did not have state-of-the-art factories like those found in the EPZ, they have a fairly modernised production technology. One firm that exports to the European market had big 'subcontract' orders for embroidery, sand-blasting and stone-washing from local EPZ firms. According to a respondent from this firm, their embroidery, stonewashing and sandblasting machinery were of high quality – that is the reason why EPZ firms were giving them subcontracts.

### **7.2.3 Value Chain Leading to the Domestic and Regional Markets**

The value chain map for the domestic market as well as the African regional market is presented in Figure 7.4. Overall, this mapping follows the same structure as those of the US and European chains (see Figures 7.1 and 7.2, respectively). As with other value chains, the vertical movement represent input-output structure, while the horizontal one basically shows the location of key activities in the chain. The flow of goods and information among actors in the chain is indicated by arrows connecting various activities. Generally, the organisation of the domestic and African regional value chains is completely different from the US value chain, but has some similarities with the European value chain as outlined above (see Figure 7.4). In both chains (domestic and regional markets), relationships between producers and buyers are market-based as reflected by indicators such as low degree of buyer concentration and the concentration of sales on main

clients, the strategic option of selling directly to retailers and wholesalers (McCormick & Schmitz, 2002).

Market-based relationship buyers and producers deal with each other at an arm's-length. Buyers in these chains were many and diverse, and none of them were strategically placed to control the activities of other actors. In total, the 24 firms sampled in this study were inserted in either the domestic and/or the African regional market value chains. There were other overlaps because of the firms that participate in more than one value chain simultaneously.<sup>73</sup>

Firms in the domestic value chain produce a variety of garment products, which can be broadly categorised as standard garments, promotional garments, industrial uniforms, institutional uniforms and corporate uniforms. Others are involved in the production of military/security uniforms. The combination of products in a firm is determined by the type of machinery available; and is classified into knit or woven garments' machines. Increasingly, firms in this chain, majority of which are registered as local firms, have at least one assembly line for either woven or knit garments.

The relationship between buyers and producers in this chain is market-based, and producers are in charge of all strategic production activities, ranging from design, branding and marketing of garments, which are undertaken by buyers in other chains. Designs are developed within the firm by the producers but buyers occasionally give specifications of the product they want to buy, especially corporate buyers and boutiques, even though the ultimate design is done by the producer. Sources of designs at the firm level varied considerably. In line with Kinyanjui and McCormick (2003:11 ff), sources of designs included fashion magazines, pattern books, specialized and trained garment designers, buyers, trade fairs, and second-hand clothes. In some cases however, boutiques and corporate institutions developed designs in collaboration with the producer, in which case garments would bear the brand name of the buyer. Therefore, one can argue that designs in this chain are developed internally or copied from external sources.

---

<sup>73</sup> See the discussion in section 6.7 of this thesis.

In this chain, the producers are not inclined to a single or a group of buyers, even though relationships appear to result in repeat orders. With time, buyers and producers develop a relationship that enables them to relate closely without any of the two being in charge of activities of the other. Producers undertake procurement of all raw materials, in which case a producer has a market-based relationship with suppliers. In Kenya, we found that sources of raw materials ranged from the domestic market, the African region, to Asian countries such as India and China. The selection of the suppliers of raw materials is at the discretion of a producer, but obviously with consideration to quality, price and availability. Although for a long time firms in this chain depended on locally made fabric, increasingly, they are importing from Asian countries, but have not abandoned local suppliers (Figure 7.4). Most of the respondents argued that the source of raw materials was determined by the price a customer was willing to pay for the garment, which was indirectly dictated by the quality expected. Labour is mainly sourced from Kenya, even though some firms employ expatriate technical staff, particularly in the design production and marketing sections. Just like those in the EPZ category, firms in this chain relied on local suppliers of business services such as finance and accounting, transport, engineering and insurance.

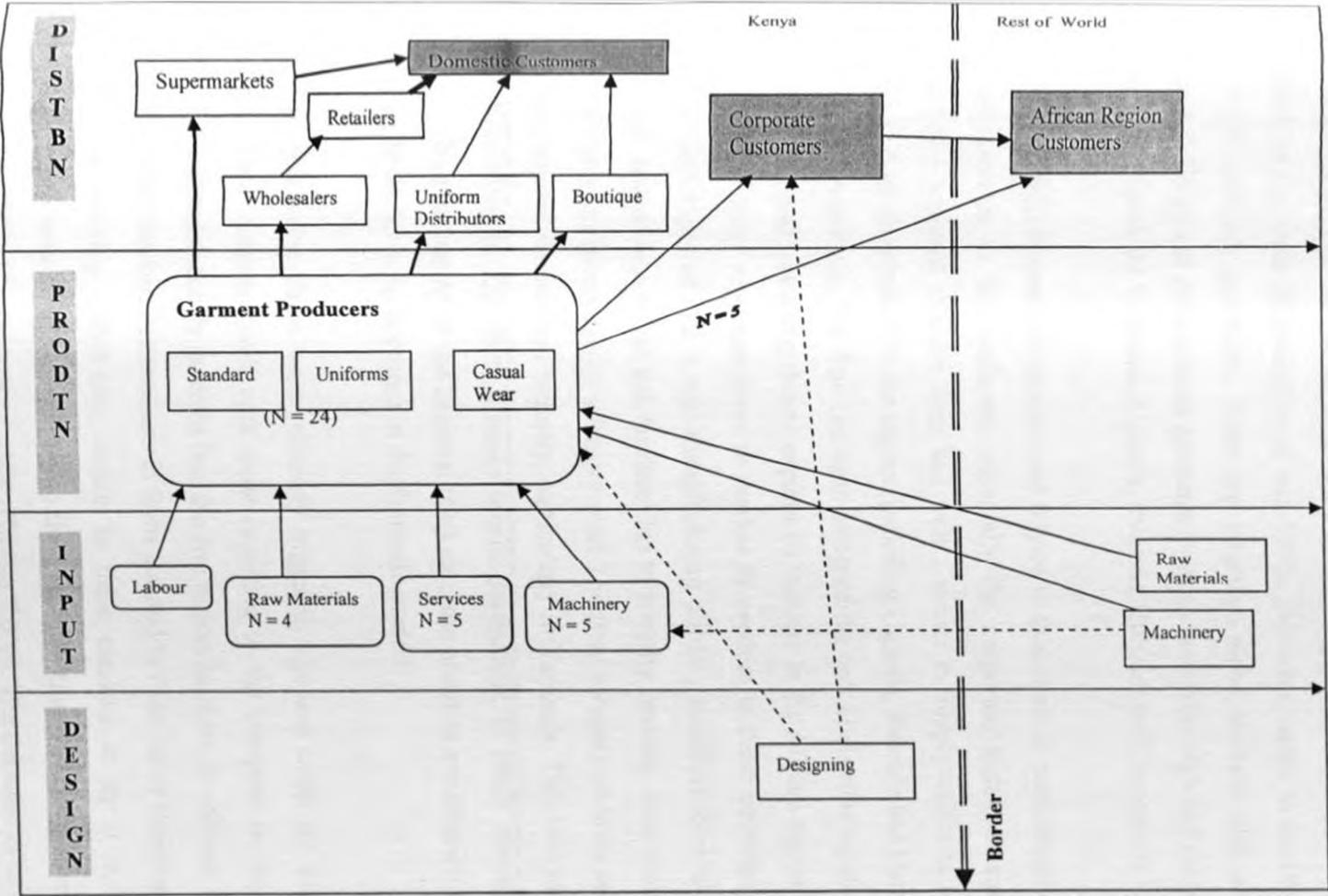
Production activities, including design and procurement of raw materials, are done by the producers who in most cases are in charge of quality control mechanisms. A vast majority of firms in this value chain (80 per cent) were using 'assembly-line' production processes, and only a few of them (20 per cent) were using 'make-through' processes. However, those using make-through production processes indicated that they were hoping to convert their production layout to assembly line. There was consensus among respondents that the 'assembly-line' production process was superior to the 'make-through' process, particularly when dealing with large volume orders. Further investigation reveals that firms using the 'make-through' process were mainly in the lower end of medium-scale category of the industry. A vast majority of production machines used in these firms were bought locally (from importers or approved local assemblers). Others bought their machinery from local EPZ firms, while a few imported directly from, say, United Arab Emirates, China, Japan and the USA. Generally, firms used different sources of machinery depending on the nature of machinery as well as the costs. Respondents indicated that a

production machine imported directly by a firm was likely to perform better and last longer than a second-hand one, or locally assembled machines.

Firms in this chain were in charge of the marketing and distribution of the products. This study found that all firms in this category were marketing their own brand names. About 60 per cent of the firms reported using sales representatives to carry out marketing activities. The sales representatives in this chain reported to the producer. This is in contrast to agents in quasi-hierarchy value chains who reported to the buyer. Similarly, we found that managers and sometimes owners of the firms also doubled as sales representatives and would market their garment products directly.

The main distributional and marketing channels included clothing outlets, tourist hotels, corporate institutions, schools, supermarkets, retailers and boutiques (Figure 7.4). Many firms indicated that they were selling their products through supermarkets (chain stores). Other channels of distribution included garment wholesalers and retailers and uniform distributors. Finally, there were corporate clients and boutiques who somehow offered different channels of distribution. According to respondents, sales to boutiques (local branded buyers) were declining as most of these preferred to import clothing directly from UAE and China instead of sourcing locally. While this may be cost-effective on their part, the trade-off is that they are now selling garments which do not bear their brand names. In contrast, when sourcing from local producers, their garments would have their brand names, making marketing easier. Corporate customers were reported to demand high quality products particularly for staff uniforms and promotional materials. For example, the Kenya Airport Authority, which had placed an order with a local garment company for its staff uniforms, used an international quality assurance company to ascertain that the uniforms met international standards. Similarly, University of Nairobi was reported as subjecting producers to rigorous quality assurance processes before awarding its tenders for corporate polo shirts. In spite of the rigorous quality checking process, producers were contented by the willingness of corporate clients to pay higher prices for quality products. This is certainly a promising market for local garment manufacturers as corporate institutions seek to enhance their brand recognition.

Firms in this chain face strong competition from imports, particularly those from new clothing stores from China and India. According to a respondent in our survey: “*Kenyan consumers prefer to buy cheap and elegant looking garments from china without serious consideration to quality*” (Case Study 3, 2006). Although competition among producers in the domestic chain is present, it is not as fierce as the one posed by China and India. Another source of competition is the second-hand clothing from developed countries, which started flooding the market in 1990s. The most affected segment of garment industry are low-income consumers. As a strategy, firms in this chain were increasingly shifting from the production of standard garments production to uniforms where competition is believed to be low (Fieldwork, 2006). One respondent reported that “in uniform production, competition from either China or America – with their new or second-hand clothing- was low. This is the reasons why we are all shifting to uniform production (Case Study 4, 2006). This corroborates findings by McCormick *et al.* (2001) to the effect that garment manufacturers were venturing into the production of uniforms to counter competition from second-hand clothing. This strategy seems to have been intensified by the domestic firms.



**Figure 7.4: Domestic Market and Africa Region Market Value Chain Map.**

*Source: Author's Fieldwork, 2006*

In the African regional market, the structure of the chain is much similar to that of the domestic market. The five firms that exported to this regional market were all employing their experience in the domestic market, which apparently accounted for the biggest share of their sales. Firms in this value-chain are making a come-back after being pushed out by competition, which was heralded by the trade liberalisation of mid-1990s. However, unlike in the 1980s and 1990s when they sold ordinary garments, firms are targeting niche markets such as tourism, military, corporate clients and promotional garments – which constitute high-end clientele. Major markets in this chain included Tanzania, Uganda, Rwanda, Burundi and Democratic Republic of Congo.

The relationship between producers and buyers in this chain is market-based. The main line of specialisation is in the uniforms, especially the corporate high-end segments. One of the respondents reported that his firm had won a tender to supply uniforms to a large corporate dealing in fuel distribution in the region (including Uganda, Rwanda and Democratic Republic of Congo). Subsequently, this firm had been assigned the task of distributing staff uniforms to these new markets, and was using this to expand its markets in the African region. To do this the firm had recruited sales representatives to market its product in these countries (Fieldwork, 2006). Another firm reported that it was manufacturing military uniforms for a neighbouring country, which the respondent could not disclose due to security reasons, even though we were shown some of these uniforms during a factory visit. The final category of firms selling in the regional markets targeted the tourism industry, particularly in Tanzania. This firm had teamed up with a local distributor in Zanzibar, a major tourist destination, to reach customers in this market. Overall, the penetration to the regional markets came about as a market-diversification strategy, resulting from fierce competition in the domestic market.

Firms in this value chain were relatively bigger in size and employed between 100 and 400 workers. This compares well with those exporting to the European market. For instance, two firms were simultaneously inserted into the two export markets, in addition to being key players in the domestic market. Respondents in firms inserted in these value chains argued that they were considering opening distribution outlets in these markets so as to increase their exports. However, they were holding back due to the huge investment costs involved (see arguments by Clercq *et al.* 2005; Morrison *et al.* 2008; Gibbon, 2000). The decision as to whether to use sales representatives and making business trips to these markets was a tricky one. One of the main attractions in this region is the similarity in consumption behaviour in the region such that a

producer is not required to introduce new production lines to serve this market. Producers are hopeful that if the regional integration negotiations are speeded up and concluded, this would help them export to these markets without having to worry about customs, which at that time was costing them a lot in terms of time and money.

To conclude this discussion, Table 7.1 summarises some of the key variables that distinguish value chains in the Kenyan garment industry as per the preceding discussion.

**Table 7.1: Key Variable of Garment Value Chains in Kenya**

Variable	US Market	European Market	Domestic Market	African Regional Market
No of firms	20	4	24	5
Firm age	Young (3 -10)	Old (10 – 30)	Mixed (1 – 84)	Mixed (8 – 30)
Ownership	Largely Foreign	Local	Local	Local
Firm size	Large (500 - 2300)	Large (100-300)	Medium– large (20 – 350)	Large (100 -350)
Designs	Buyers	Producers & Buyers	Producers	Producers
Raw materials	Buyers	Producers & Buyers	Producers	Producers
Source of raw materials	Imported	Domestic/ Imported	Domestic/ Imported	Domestic/ Imported
Production Process	CMT	FOB	FOB	FOB
Buyers	Large US retailers	Small–medium buyers & importers	Small–large buyers	Small –large buyers
Technology	Modern	Mixed	Mixed	Mixed
Quality Demands	High	High	Mixed	High
Lead times	Strict	Strict	Flexible	Flexible
Producer – Buyer Relationship	Hierarchical	Balanced Network	Market-based	Market-based
Market Share	Large	Small	Large	Small

Source: Author’s Fieldwork (2006)

In general, one can argue that there are clear distinctions among various value chains present in the Kenyan garment industry. However, the US value chain, depicting a typical GVC, is somewhat different in many ways from the other three. Based on this, this study hypothesises that upgrading potential in this chain is different and unique from the other three owing to differences in governance structures as discussed in the following section.

## 7.3 Governance Structure in Garment Value Chains in Kenya

### 7.3.1 Governance in the Value Chain Leading to the US Market

Kenya's entry into the US value chain is not a recent phenomenon, but has gained prominence after the enactment of AGOA (2001); and also the exhaustion of quotas among Asian countries under the MFA regime. Between 2000 and 2001 (Table 2.3) exports to the US almost doubled from US\$ 30 million to US\$ 55 million; employment more than doubled, so is the number of export-oriented firms.<sup>74</sup> Hence, Kenyan garment firms in the US value chain can be termed as 'latecomers' in the US chain, a terminology coined by Hobday (1995, cited in Schmitz, 2005). In addition to being latecomers, nearly all the 20 firms in this chain were only involved in the assembly model of production (Gereffi, 1994, 1999).<sup>75</sup> Moreover, going by the nature of firms' operations, buyers, and the products, this study suggests that Kenyan firms operate at the lower end of the garment value chain.

As already mentioned, the US market is the largest single most important market for Kenya garments, accounting for more than 80 per cent of garment exports in 2006. The US value chain governance is a classic quasi-hierarchy where powerful buyers control what is to be produced, how, where, and when. Designs are developed solely by producers and channelled either through the head office or sourcing agents to the local firm, which has to prove its ability to produce the garment but replicating the sample and sending it back to the buyer for final approval. The buyers are also in full control of sources of raw materials and local firms are not in any way involved. The connection between the buyer and the producer is very limited and it may involve a quality controller being sent to check how the production is progressing. There is strong evidence from this study that the buyers dictate prices for producers located in Kenya. Local manufacturers have to comply with the set prices because buyers always threaten to move their orders to other locations if a firm cannot produce at the given prices. This is similar to what Bazan and Navas-Alemán (2004) and Navas-Alemán (2006) call 'exit-options' in the case of Brazilian footwear industry.

---

<sup>74</sup> This is not meant to imply that Kenya never used to export garments to the US prior to 2001, rather they exported under GSP and the value of this market was smaller than the EU exports. McCormick *et al.* (2001:17) argues that when the US banned exports of garments from Kenya, about 53% of firms exported nothing in 1995.

<sup>75</sup> The assembly model is a form of industrial subcontracting in which manufacturers provide the parts for simple assembly to garment sewing plants.

In 2005 for instance, following the termination of MFA, powerful US buyers collectively began to demand that Kenyan producers lower their CMT prices by 25 percent so as to match those that were being charged by China and India, the most advanced garment producers (McCormick, *et al.* 2006). In order to avoid losing orders in the uncertain circumstances of liberalised environment, most firms in our sample indicated that they complied with demands by buyers to lower their CMT prices. That meant that firms had to adjust their operation costs as a way of absorbing the lower prices, of which the easier option was to pay less for labour (Phelps, 2009). In this strategy, firms downsized their labour force and also began casualisation of labour contracts.<sup>76</sup>

The powerful US buyers according to our respondents were more demanding than buyers from other markets. These demands were more obvious in the sourcing of raw materials, quality control measures, strict deadlines, short lead-times and working environment in the factory, and hefty penalties for failing to meet their requirements. Buyers ensured that their demands were met by carrying out regular and random audits to assess if firms were complying. It is not uncommon to find a statement of the buyers' sourcing ethics pinned on the wall of local firms, replete with rules and regulations that they expected their suppliers to fulfil. Given the diversity of buyers' requirements, a firm has to keep on changing its production procedure every time a new buyer brings a new order. Again, if a firm was doing two or more separate orders for different buyers, there is likely to be confusion on which regulation to adopt. Often, this leads to confusion and derailment in the production process. Producers were penalised heavily when, for instance, they were unable to make a shipment on time. One respondent informed us that at one point there was heavy congestion at the only port of Mombasa and goods could not be cleared by the Customs for shipment on time. The firm was forced to airlift the consignment at its own cost; or else the whole order would have been cancelled.

During the conduct of this study, the author came across two EPZ firms that were working on an order for Wal-Mart; but one firm had been given an order for only medium size garments, while the other one was servicing an order for large and extra large garments. Interestingly, these orders were placed separately, although the agents in charge the same. None of the two firms was aware that the other was fulfilling an order from the same buyer. This is a clear indication of a

---

<sup>76</sup> In India, Vijayabaskar (2002) argues that garment firms find it easier to adjust labour costs through lay-offs as they adjust to new environments or policies. This has become very common among firms exporting to the US.

disconnect among EPZ firms and how buyers, through sourcing agents, have capitalised on triangular manufacturing to source their garments from as many producers as possible, and perhaps at different CMT prices. To reinforce this point, a respondent reported that if a factory tried to negotiate for higher prices than what was being offered by the buyer, more often than not, the buyer would threaten with a cancellation of the entire order and move to the next factory within the same neighbourhood (Fieldwork, 2006).

In summary, the governance for the US market value chain is characterised by:

- 1) Powerful buyers exert enormous control on all activities of the chain with an objective of making sure production is conducted in adherence of their terms.
- 2) Buyers have the tendency of using agents who assume the responsibility of chain coordination on their behalf.
- 3) Buyers resist sharing their knowledge on activities such as design, branding, marketing and chain coordination, areas which apparently command higher gains.
- 4) Buyers have numerous and varied sourcing patterns (or 'exit'). They have alternative sources to turn to in the unlikely event that local producers fail to adhere with their terms.
- 5) Local producers operating in this chain do not have their own design and marketing channels in the US and therefore risk being cut off from the US market.
- 6) The US market tends to be price-driven and attract low profits. Nonetheless, buyers are very keen on timely delivery.
- 7) The firms inserted in this chain are large-scale mass producers who undertake CMT orders. Majority of these firms are foreign owned with strong linkages to Asian countries. As a result of such linkages, producers somehow make use of such networks to access the markets.

### **7.3.2 Governance in the Value Chain Leading to the European Market**

The European market differs from the US market in key regards. First, it is much less homogenous due to differences in size, tastes, language, and marketing. Secondly, there are few large scale retailers unlike in the US market. Gibbon (2000:13) argues that in Europe, sourcing for the middle- and upper-market segments has historically been much more localised, a pattern that appears to be fragmented according to national patterns.

The European value chain is quite distinct, with buyers dealing more closely with producers in Kenya. Local firms supplying to this chain are always involved in the design development, although the larger component of design is in the hands of buyers. European buyers often chose to work with a small number of suppliers but on long-term partnership. The European value chain is therefore balanced, mainly because buyers maintain control of the chain while at the same time allowing the producers a higher degree of freedom. Buyers in the Kenyan garment industry are not established chain retailers but small buyers with small retail outlets in different parts of Europe. Although buyers in this chain are powerful, they do not exert control on chain activities. In most cases, buyers collaborate with producers in key activities of the chain where insistence on the use of approved suppliers not common, and the quality control measures are less stringent (see Schmitz and Knorrington, 2000; Gibbon, 2000). Unlike the large scale buyers in the US, those in the European market are smaller in size.

The sourcing of raw materials depict collaboration between the producer and the buyer, in which case the buyer does not exert enormous control on who should supply the raw material. Respondents indicated that in most cases the buyer leaves the supplier and the producer to negotiate and agree on how to supply inputs. Sometimes a buyer introduces the producer to several suppliers from whom to select one to procure raw materials. Although European buyers are known for their demand on quality, producers in Kenya appreciated working with them because they were more supportive in ensuring that the quality they demanded was met. In addition, buyers in this chain do not involve intermediaries as they prefer dealing directly with the producer. These buyers depend mostly on networks and referrals when contacting new producers in Kenya, and they would initially give smaller and infrequent orders. It is only when they were assured of the producer's capability that the frequency of orders would increase.

### **7.3.3 Governance in the Value Chain for the Domestic Market**

This chain is the oldest and perhaps the one that has driven garment industry in Kenya. It has survived many tribulations having developed during the import substitution era, then had its downturn during the trade liberalisation period before gradually regaining its lost status. This chain is organised such a way that producers and buyers are linked in market-based relationships (see Humphrey and Schmitz, 2000; McCormick and Schmitz, 2002). The producers are in charge of all strategic activities such as design, procurement of raw materials, and marketing of their

products. The buyers are mainly involved in the distribution of goods in their respective markets. Thus, there has been no need for hierarchical collaboration between producers and buyers because the market governs the chain. Buyers simply place orders for a given quantity of a particular quality, quantity and size.

Firms in this chain are smaller in size but some of them have strong resilience having survived trade liberalisation and are still penetrating export markets such as the European and the African regional markets. Producers work closely with buyers but each retains its independence in the relationship.

Producers in this chain take upon themselves to find new customers and orders by designing their own brands (see discussion in section 7.2.3). Some firms participate in exhibitions where they market their products. In penetrating new markets, producers in this chain use sales representatives, whether on commission or as employees, but they are accountable to the producer. Buyer concentration in this value chain is low compared to typical global value chains.

#### **7.3.4 Governance in the Value Chain for the African Regional Chain**

The governance structure in the African Regional chain has similarities with the domestic value chain in that producers and buyers deal with each other at arms-length relationship. None of the actors in this chain can claim chain leadership because independence of all actors is maintained. The firms which participated in this chain were also trading in the domestic market and were only venturing into the regional market as a diversification strategy. In this connection, firms were marketing their own-brands and designs. The five firms participating in this chain mentioned causal wear, standard uniforms, corporate uniforms, promotional garments and also military uniforms as the lines of entry. They also make other items most of which are destined for the domestic market. Firms in this chain also tend to combine both the knit and woven wear.

#### **7.4 Upgrading Patterns in Garment Chains in Kenya**

In chapter four, we defined upgrading as the process of improving the ability of a firm to move to more profitable and technologically sophisticated capital and skill intensive levels. This in turn

shapes local development outcomes in those areas where the chain touches down and also improves prospects for upgrading. Upgrading as a pattern involves both forward (marketing) and backward (sourcing) linkages from production to the final distribution of the products. Literature further suggests that most of the value chains are controlled by lead firms who coordinate and regulate the organisation of the production process (Bair and Gereffi 2001, Kaplinsky and Morris 2002; McCormick and Schmitz 2002; Gereffi *et al.*, 2005). At the lower end of the chain, upgrading by firms is dependent on developing linkages with the lead actors either upstream or downstream (Gereffi, 1999, 1994). Looking at the upgrading patterns in Kenyan garment industry, we confine ourselves to three main types: process, product and functional upgrading. There is no evidence to suggest occurrence of inter-chain upgrading in the garment industry. This was therefore not considered as a variable.

#### **7.4.1 Upgrading Patterns in the US Market Value Chain**

In the chain leading to the US market, this study has have demonstrated how the US buyers govern the chain by exerting control on virtually every chain activity. These buyers' control cuts through the designing, procurement, production and the distribution of garment products – quasi-hierarchy governance structure. The buyers set strict rules to be followed by the producers supplying to this chain. Apparently, producers that fail to comply with any of these requirements risked the entire order being cancelled, or not getting further orders.

Process upgrading; which relates to increasing efficiency of internal processes was evident among firms operating in this chain. A firm was described as having undergone process upgrading if (1) it had invested in production machinery, (2) engaged in training of its workforce, (3) it had changed production layout from make-through to assembly line, (4) it was employing new management techniques, (5) it had introduced quality management, and (6) if it had adopted sound production practices.

Firms inserted in the chain leading to the US market are characterised by strong process upgrading driven by buyers' demands for quality production. Firms were particularly concerned with lowering rejection rates, which would sometimes lead to cancellation of an entire order. In this regard, they were paying special attention to quality production to avoid negative repercussions. The level of production technology was modern and of high quality, which can to

a certain extent be attributed to most firms in this chain being newly established. Old production machines were being replaced by new ones to ensure smooth flow of production. To quote one of the respondents whose firm was operating in this chain:

*'Our technology in producing garments is as good as that of China and India, which are the leading producers and exporters of garments in the world. ....we get our machinery from the same suppliers as them and therefore our production processes are similar'* (Case Study 8, 2006).

Most of the firms (75 per cent) in this chain have adopted computer-aided design (computer-aided manufacturing), which has accelerated the process of developing or duplicating designs. In addition, they had acquired modern machines for checking the quality of the fabric, spreading the fabric, and also using automated cutting machines. According to one of the respondents:

*'Our firm has recently invested in an automatic spreader that has significantly improved our efficiency as one roll of fabric is now being spread in less than five minutes work that was previously taking three hours of four operators'... In addition, this machine is able to detect any defect on the fabric and communicate this to the cutting-in-charge for necessary action* (Case Study 7, 2006).

All firms in this chain were export-oriented and therefore the production process began on assembly-line layout. Literature suggests that the assembly-line production is the most effective production system in garment manufacturing (Fukunishi *et al.* 2006). In order to ensure that their production processes were efficient, firms introduced more quality check-points along the along the assembly lines instead of having them at the end. In addition, specialised sewing machines were installed along the assembly lines as opposed to special tasks being done at the end of the line. On management, most firms began by using expatriates with more experience in garment manufacturing than the local staff, but with time they replaced expatriates with local staff. Increasingly, this study found that local staffs were taking managerial positions, a finding that contrasts Phelps *et al.* (2008) who indicated that majority of the managerial positions within the export-oriented industry were held by expatriates. Some buyers (like Russell and Levi Strauss) advised their suppliers to adopt an open style of management by promoting dialogue between production workers and management, a practice that is gaining popularity.

Training of workers in this chain was low, with most firms indicating that the only training that they offered was the 'induction' given to new workers when they join the firm, which was

conducted on-the-job. None of the firms in our sample reported having a well structured formal training programme for their workers. Interestingly, one firm which had introduced a training program for its workers suspended it after realising that in spite of this training being an expensive venture, more often than not, the trained workers left the firm within three months after completion of the training to seek employment in other EPZ firms. Although buyers were keen to see that the labour force was well trained, none of them were supporting producers to carry out training. While recognising the lack of well trained staff as an impediment to quality production, firms were unable to meet this expense particularly due to the high turnover of labour force within the industry. At the time of carrying out this study, there was one buyer who was running a programme aimed at creating awareness on HIV/AIDS with two firms that this buyer was sourcing from.

The experience on product upgrading for firms inserted in the US value chain shows mixed results. On the one hand, some firms which were established to manufacture standard t-shirts had within three years of operation introduced new lines to produce woven garments such as 'casual wear' and jeans while still maintaining their standard t-shirt lines. The argument was that even though jeans were more demanding to produce, CMT prices were high, hence constituting product upgrading. Prior to 2005, the quota for jeans exported to the US market was higher than for standard garments, which enticed local firms to upgrade. In addition, firms were also adding value to products through embroidery, stonewashing and sandblasting. With the termination of MFA, the relevance of quota is limited to the 'safeguards' that the US negotiated on the accession of China to the WTO (Adhikari and Weeratunge, 2007). Moreover, some firms have moved back to standard t-shirts where they can compete on volume rather than on price. In our sampled firms, only three were still specialising in jeans manufacturing. An interesting finding from our survey is that most of the product upgrading in Kenya was buyer-driven. Respondents argued that they had expertise to produce any garment as long as buyers were willing to pay appropriately. However, the concentration in standard garments was driven by the orders. This finding is consistent with that of Phelps *et al.* (2009) who argue that production of standard garments in Kenyan EPZ results from market availability and mass production capabilities.

The structure of governance (quasi-hierarchy) appears to limit functional upgrading by Kenyan garment firms. In this chain, buyers controlled all critical activities such as designing, procurement and marketing; and they were not willing to share information with producers.

According to our results, none of the surveyed firms in this chain had developed or launched their own new lines or new brands in other new markets. This finding fails to support Gereffi (1999) whereby functional upgrading was observed among firms inserted in quasi-hierarchy global value chains. Furthermore, none of the producers invested resources in marketing or research and development in the US-based chains, which is a prerequisite for functional upgrading.

#### **7.4.2 Upgrading Patterns in the European Market Value Chain**

The European value chain in Kenya constitutes a balanced network: (1) the buyers control some of the strategic activities in the chain (quasi-hierarchy), and (2) buyers and producers collaborate in designing (modification or at formative stage), as well as in procuring some raw materials (balanced network).

As already mentioned buyer-producer relationship in the value chain leading to the European market is cordial and built for long term. It is also based on a loose certification process and is less insistence on the use of approved suppliers; production specifications requirements are low as well as the extent of quality control. In the event of problems with orders, respondents argued that European buyers were more accommodative than the US buyers in that they (European buyers) would not reject an entire order as is the case with most buyers in the US.<sup>77</sup> Although the European buyers are just as keen on quality as their US counterparts, they collaborate with producers to ensure that their quality demands are met. Because of their emphasis on quality, they tend to develop more respectful relationships with producers and work closely together to achieve quality improvements. Their certification process, QC and product specification detail requirements are more relaxed than those of US buyers.

One interesting finding from this study is that these buyers seem not to feel threatened by Kenyan producers. In most cases, these buyers market products in brand names of producers. The collaboration between producers and buyers has resulted in developing designs and procurement of raw materials a joint effort. The buyers work together with producers to improve

---

<sup>77</sup> Gibbon (2000) in distinguishing between the EU and the US buyers in Mauritius argues that 'the EU buyer will normally take and pay for all saleable garments available-whereas for the US, being 1,000 garment short is treated the same as being 25,000 short.

on designs and quality to enable goods produced in Kenya to penetrate the European market. In Europe, buyers would occasionally invite Kenyan producers to exhibit their products and trade fairs. Similarly, buyers were willing to share information on marketing with their respective producers. Given this structure of governance, firms inserted in this value chain demonstrated higher prospects for upgrading than those in all other chains.

*Process Upgrading:* Firms have moderately invested in the improvement of their production processes. Increasingly, firms in this chain are acquiring new and modern production machinery, sometimes with the assistance from buyers so as to increase their productivity. One firm indicated that before it started exporting to the European market, production was through a make-through process. But it had by the time of our fieldwork adopted assembly line production. Three of the four firms in this chain had invested in embroidery machines. In particular, one firm was being subcontracted by local EPZ firms to do embroidery work for them. Although there was no full-blown training program for workers, firms in this chain were paying more attention to training than those in hierarchical chains. Comparatively, workers in these firms were better trained on operations than those in the US chains; and they were more motivated in their work than was the case in other chains. In one firm, this study found that designers spent up to three months with a buyer in the UK undergoing training on how to design appropriately. On-the-job training was also common in these firms.

*Product Upgrading:* This was a common practice among producers who started by making standardised garments (say t-shirts), but increasingly moved on to more sophisticated products involving embroidery and prints, which definitely attracted higher prices than ordinary t-shirts did. In one case, a firm was producing organic cotton products for the EU markets by targeting middle income environmental conscious consumers in Europe. Other products targeted for the EU markets included safari wear (pure cotton casual wear).

*Functional Upgrading:* Most firms in this chain had their own brands, which were designed locally, even though some were copied. Examples of brand names in this chain included "Lamu-Lamu", "ONE-WAY", "Tinga-Tinga", "Mkokoteni" and "Crown".<sup>78</sup> In addition to producing for the European market, these firms commanded a good share of high-end domestic market in

---

<sup>78</sup> These brand-names may not be internationally known, but firms reported to be working with buyers to ensure that these brands are eventually registered in the countries where they were being sold.

casual wear. Their products were exhibited in such places as airports, tourist hotels, and high income shopping malls. Their brand names were popular in the domestic market, and going by the price of the garment, it was clear that they were targeting a niche market in Kenya. In short, it was emerging that functional upgrading was taking place among the firms in this chain.

### **7.4.3 Upgrading Patterns in the Domestic Market Value Chain**

One of the reasons always given for the need for coordination in garment value chains is the buyer's role in product definition and the risk to the buyer of supplier non-compliance with product or process requirements (Schmitz, 2006:559). It therefore follows that market-based value chain tends to develop when these two factors do not apply, i.e. the products are 'standard' while the buyers are 'design takers'. In this case, suppliers are able to meet the requirements of customers, design products and have marketing know-how (Schmitz, 2006). The domestic garment chain is a classic example of market-based governance in which both suppliers and buyers deal with one another at arms-length. Upgrading patterns in this chain are low compared to the European chain, but upgrading cannot be ruled out. It is important to note that although most firms in this chain are medium scale, the four firms exporting to the European markets are also included here since they have a domestic market share. Equally, those firms exporting into the African region are part of this group (Figure 7.3)

*Process Upgrading:* Firms in this chain are generally recovering from a long spell of stagnation following trade liberalisation, with exception of a few that have maintained their presence in the export market. In order to weather competition from China and India, and also from second-hand clothes, both of which are threatening the survival of these firms, there has been a call for local producers to either 'upgrade' or 'perish'. Firms are generally realising the need to invest in modern technology and become more proactive in marketing their products. Although, there was no evidence of massive investment for most firms in this chain, a few of them had acquired new machines. One firm, for instance, had just imported an embroidery machine from the US, which the respondent (a production manager) bragged was unique in Kenya. This firm had also replaced all the old sewing machines with relatively new ones bought from an EPZ firm that had closed down. Most firms in this category were not investing in training, a function they felt needs to be undertaken by the state.

*Product Upgrading:* Although most firms continue to produce standard garments, an overwhelming majority have introduced a new line, that of uniform production. Respondents claimed that uniforms were more demanding and required better workmanship than ordinary garments. Buyers were also willing to pay more for high quality products. During one of the author's factory visits, an order for the national airline's staff was being serviced. According to one respondent, this kind of work demanded high quality production and required very qualified operators to process this order.

*Functional Upgrading:* Firms in this chain were in charge of key activities of the chain. They designed and marketed their own branded products. It is important to put a caveat here that these brands were localised within the country and may not match the brands in the global value chains. Since producers were in charge of designing and marketing products, their potential to upgrade within the chain is much higher than those in quasi-hierarchy value chains.

#### **7.4.4 Upgrading Patterns in the African Regional Market Value Chain**

The model of the African garment chain is similar to that of the domestic chain since it is an extension into the regional market by firms in the domestic chain. These producers are entering the regional markets through the market diversification strategy. As with the domestic chain, the three types of upgrading were observed.

#### **7.4.5 Upgrading Patterns Firms in Multiple Market Value Chains**

The literature has not sufficiently recognised the significance of operating in several chains simultaneously. By working for several value chains, firms are exposed to different styles of governance that stimulate different types of upgrading. This is very powerful when combined with a deliberate intent to apply the newly acquired capabilities in the more flexible value chains (Bazan and Navas-Alemán, 2004:126; Kishimoto, 2004:249). The importance of participation in multiple chains is underlined by Bazan and Navas-Alemán (2004:127 ff) who explicitly compare the captive chains linking Brazilian shoe producers to Europe and North America with market based chains linking producers to both the domestic and regional markets within Latin America. In the case of these latter markets, small buyers purchase ready-designed shoes and either sell

them under their own labels, or under the producer's own brand. Market based relationships in the (large) domestic market facilitated the build-up of substantial capabilities in design and marketing; and Brazilian producers were able to export to the Latin American market products which they had designed and branded. According to Schmitz (2006), Brazilian brands and designs are very visible at trade fairs in Latin America, but much less so at trade fairs in Europe or the US.

The Brazilian case illuminates the synergy that is created when firms participate in multiple chains with different styles of governance. Moreover, Kishimoto (2004) argues that Taiwanese computer firms in captive chains used the technical know-how gained in these chains to promote their own designs and brands. The difference between these two cases is not only in the sector focus, but also in the size of domestic markets; but could offer a lesson for a small economy like Kenya and its garment industry.

Evidence from Kenya shows that firms inserted in both the European and the domestic chain experienced the three types of upgrading (process, product and functional). Product upgrading was evident as firms invested in modern technology in an effort to meet the high quality demands demanded by their European buyers. They were also paying more attention to workers' training than was reported in the quasi-hierarchy value chain. Product upgrading was present as firms transformed from producing standard garments to high quality products, which involved sophisticated design and embroidery. Moreover, the casual wear was aimed at reaching a different clientele in Europe as opposed to standard garment clientele. There was some degree of functional upgrading as firms in this chain have developed their own brand and designs, which they market in both the domestic and the European market. Increasingly, producers were also assuming activities initially preserved for the buyer – design and procurement of raw materials, an activity that exposed them to design and branding, which is absent in US quasi-hierarchy chains. Although their brands are not well-known in Europe, firms in this chain were optimistic that they would achieve this by spending a little more on marketing. In their domestic market, firms operating in multiple chains targeted high-income consumers as evidenced by the location of their shops.

In line with Bazan and Navas-Alemán (2004), there is modest evidence to support the position that in a small economy like Kenya, garment firms participating in multiple chains can develop

their capabilities through upgrading and eventually enter major export markets successfully. Firms inserted in multiple chains experience functional upgrading faster than those in the rigid quasi-hierarchical chain. Moreover, the European chain governance (balanced network) facilitates functional upgrading in the Kenyan garment industry (Table 7.2).

**Table 7.2: Governance Structure and Implications for Upgrading in Kenya**

Selected Indicators of governance and upgrading	Quasi-Hierarchy	Balanced Network	Market Relationships	
	US	EU	Domestic	African Region
Market Share	High	Low	Medium-High	Low
Buyer Concentration	High	Low-Medium	Low	Low
Dependence on Intermediaries	High	Low	Low	Low-medium
Unequal division of essential activities in the chain	High	Medium	Low	Low
<b>Upgrading</b>				
Process Upgrading	High	High	Medium	Medium
Product Upgrading	Medium	High	Medium	Low-Medium
Functional Upgrading	Low	Medium-High	Medium-High	Medium-High

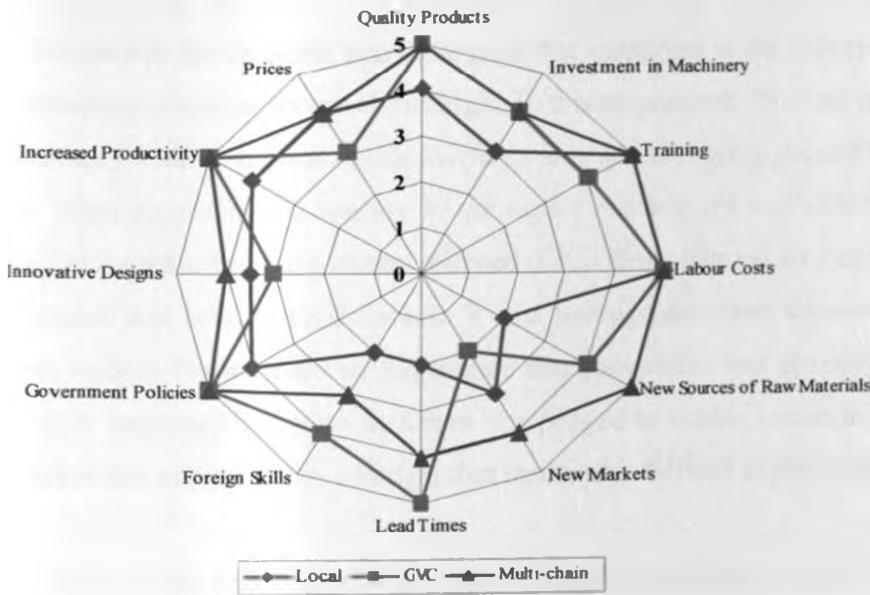
Source: Author's Fieldwork (2006); Bazan and Navas-Alemán (2004)

From the foregoing discussion, it is evident that producers participating in multiple chains achieve more functional upgrading than producers in the US market quasi-hierarchical value chains, which are active in supporting process upgrading and limited product upgrading. Their entry into the regional market is equally important as it is a springboard to 'internationalisation' of garment trade by Kenyan firms. It has been argued that firms that are intent on internationalisation prefer to gradually study the international arena by entering first markets that are perceived to be less risky – those that are geographically and culturally close to the domestic market – before entering "more risky" distant markets (Clercq *et al.* 2005). The regional market may therefore be offering local garment firms an opportunity to go international through a series of incremental steps that begin with the neighbouring countries.

## 7.5 Producers' Perceptions on Upgrading in Kenya

We asked producers to assess the importance of different indicators in terms of their relevance in determining their upgrading within particular types of chains (Figure 7.5). The average rankings of responses preferred by producers indicate that improvement in the quality of the products emerged as an important factor for upgrading in the industry. However, there was a mix of

responses as to whether such improvements should be spearheaded by the buyers or by the firms themselves. Respondents from EPZ and MUB firms inserted in the quasi-hierarchy value chains appear to favour buyer-driven product upgrading while those in other chains favour internally-driven product upgrading. There was consensus that buyers had become more insistent on quality products, both within local (national) and global markets, and that unless a firm was able to supply high-quality products, its market share was as good as gone.



**Figure 7.5: Producers' Perception on Upgrading in the Garment Industry**  
*Source: Author's Field Survey, 2006*

Other indicators such as labour costs, labour quality (in terms of training skills and productivity) and government policies were critical factors supporting upgrading in the industry. Investment in production machinery emerged as a significant ingredient for upgrading among all firms; and the most common explanation was that use of modern technology by firms increased efficiency in production, which in turn promoted upgrading. Firms engaged in quasi-hierarchical chains were keen on timely deliveries, and considered lead-time as an important factor in upgrading. One respondent argued that, "when a firm was unable to deliver on time, it suffered exorbitant penalties such as orders being cancelled or incurring high costs of airlifting products" (*Interview, 2006*).

Local firms indicated that lead-time was not very important in the upgrading potential. These producers, by operating in market-based chains that ensured that their products were readily available, did not feel the pressure of meeting strict deadlines. Moreover, the buyers in the domestic market were not as demanding as those in the US. In any case, a respondent argued, "we are able to deliver our orders even before the due date, because they are small and also by having enough stock of fabrics in our inventory...we understand what our customers may want at any given time of the year and therefore" (Interview, 2006). Venturing into new markets as a way of upgrading appeared to be important for those firms inserted in multiple chains. Local firms inserted in the domestic market argued that venturing in the export market involved huge investments; and returns were not that high. To this respondent, "*it is advisable for local firms to concentrate on niche markets within Kenya as long as the playing ground was levelled until such a time when capabilities to venture in the export markets are well developed*" (Case Study 4, 2006). On the other hand, the export oriented (EPZ) firms focused only on the US market, which they argued was being served because it was homogeneous and demand was high. To them, markets such as Europe were so fragmented that penetration was challenging. To a majority of them, their continued operation in Kenya was pegged to market access in the US; otherwise the EU market had stringent rules of origin that rendered it difficult to penetrate.

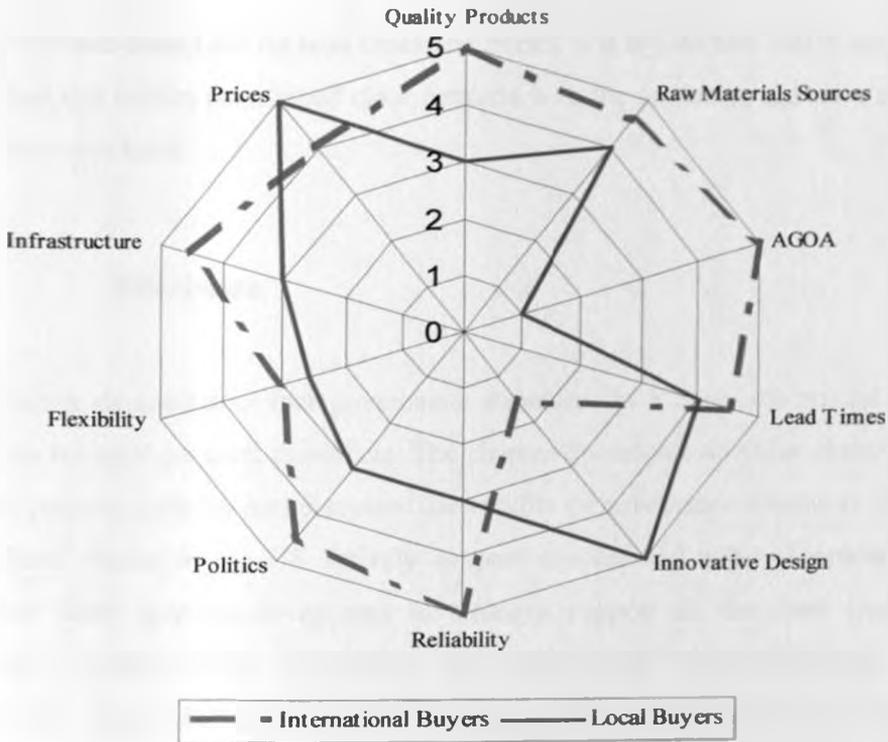
With regard to the use of expatriates in the upgrading process, local firms felt this was not important, while the EPZ firms and mixed value chain firms felt that the presence of expatriates was critical for upgrading. According to the latter, expatriates were important as they brought specialised skills, which were not locally available. In most of the firms, design and cutting sections were headed by expatriates. Local firms serving the domestic market were not keen to engage the services of expatriates, given their levels of production as well as the type of machinery used. In most cases, their production processes were the make-through type, which involved standard garment production. Employment of expatriates was perceived as an unnecessary cost. The use of innovative designs in the production process was another important ingredient of upgrading. Respondents argued that a firm that participated in design stood better chances of functional upgrading because this somehow empowered producers to develop and launch their own designs, either for the same or a different market.

## **7.6 Buyers' Perception on Factors Determining Sourcing Patterns in Kenya**

During interviews with buyers, the author asked them what issues they considered important when selecting a producer for their garments. This question was put to both local and international buyers as discussed in Chapter five. Responses are presented in Figure 7.6. For international buyers, evidence shows that market access opportunities provided by AGOA played a key role in determining whether to source from Kenya or elsewhere. Other important indicators included, obviously, the price, quality production, lead times, reliability of producers and ability to source quality raw materials.

Because of the need for timely deliveries and the increasing lean sourcing pattern, international buyers were concerned with the infrastructural support, which majority argued was a major deterrent to their sourcing in Kenya. Similarly, they were concerned about the political situation in the country they were sourcing from. International buyers were keen on the ability of firms to shorten lead times in tandem with the changing seasons in developed world markets.

International buyers argued that since they were in charge of designs for their supplies, it was not very important for producers to undertake innovative designs. Instead, their concerns were for firms to be able to replicate designs from samples developed by the buyers. Surprisingly, these buyers did not consider flexibility to be important. This is perhaps due to the fact that these buyers were in charge of most of the logistics for their products, and monitored production activities on a regular basis.



**Figure 7.6: Buyers' Perception on Upgrading in the Garment Industry**  
*Source: Author's Field Survey, 2006*

For the local buyers, price was the most important factor in determining their sourcing patterns. They were also keen on quality production and innovative designs. To them, the issue of AGOA was not important at all. Incidentally, the ability of a producer to deliver products on time was crucial, an issue that appears to be undermined by the local producers. Buyers were confident that a producer would somehow source for quality raw materials. As such they did not overly concern themselves with this variable. However, they did indicate whether they would cancel an order if quality was compromised. These buyers were concerned about the sources of materials and would consider a supplier who was able to get new and reliable sources of raw materials. One of the respondents argued that some of the raw materials imported from China were of low quality and garments made from them tended to fade quickly.

On infrastructure and politics, buyers were of the opinion that it was upon the manufacturers to deal with that. Local buyers however understood the challenges facing producers and therefore did not want to penalise them on this account. The fact that local buyers appeared not to pay attention to the reliability and flexibility of producers was surprising, especially given the

connection that these have on lead times and prices. It is argued here that this may have been due to the fact that buyers maintained close contacts with the producers and were constantly updated on the issues at hand.

## **7.7 Conclusion**

This chapter demonstrates that governance structures in a chain are crucial in the upgrading prospects for local garment producers. The chapter documents all value chains applicable in the Kenyan garment industry and discusses the validity of governance structures. While strict quasi-hierarchical chains in the US actively support process and a bit of product upgrading, the European chain governance appears to strongly support all the three types of upgrading. Similarly, a market-based relationship encourages product and functional upgrading. More importantly, firms inserted in both the European and domestic value chains are more likely to experience a holistic upgrading than those in the US value chain.

## CHAPTER 8

### EMPIRICAL RESULTS OF TECHNICAL EFFICIENCY

#### 8.1 Introduction

This chapter builds on our analysis of upgrading in the preceding chapter by estimating technical efficiency of the garment. The idea is to find out if firms inserted in different value chains experience different levels of upgrading and subsequently efficiency levels. Our discussion in Chapter Four demonstrated the close linkage between upgrading and technical efficiency (see Figure 4.1 p. 125 ff). As mentioned in Chapter Four, technical efficiency relates to how close a firm's output is to the production possibility frontier. This is essentially related to process upgrading which entails the production processes in a firm. Having discussed upgrading experiences of Kenyan garment firms in both the GVC and other chains in the preceding chapter, in this chapter we examine if firms inserted in different value chains do experience significant differences in their technical efficiencies. We begin by presenting and discussing relationships of variables used in the technical efficiency estimation followed by the tests conducted to select the appropriate model. Finally, we present estimation results of the production function elasticities, technical efficiency estimates as well as the determinants of technical efficiency in the garment industry. The knowledge of determinants of technical efficiency is helpful in formulating relevant policy interventions.

#### 8.2 Pearson's Rank Correlation Analysis of Variables

The bivariate Pearson Rank Correlations were conducted to establish the nature of associations among different variables determining inefficiency in the garment industry (Table 7.2). We conducted the same test for variables included in the production function namely the value added capital and labour. The Pearson Rank Correlation is a measure of relationship between variables and it ranks between negative one and one. It is always accompanied by the level of significance (Wonnacott and Wonnacott, 1990: 301). When the value is greater than 0.7 or less than -0.701 at a

significance level  $\leq 0.05$  we can conclude that the two variables are positive or negative.<sup>79</sup> These results are presented in Table (8.1) (Appendix 6).

The analysis reveals that age is negatively related to size, export, export market participation, foreign-ownership, EPZ Dummy, and female workers. In the garment industry, large firms are relatively new, export-oriented most likely pointing to those in the EPZ programme. They are mainly foreign-owned and majority of workers are female. This confirms our earlier assertion (Chapter One) that female workers constitute a majority of workers in the garment industry. The positive correlation between firm age and managers' skills (MSkill) is an important one.

It indicates that most of the locally-owned firms with strong family ownership have management aligned to the family. These are the old firms in our sample and their managements do not change as often as in the new, foreign-owned firms. Managers in such firms tend to be older than in foreign-owned firms but less educated. Quoting one of the respondents in a local garment firm: *"This firm is 28 years old having been established by my father in 1978, when he retired, my elder brother and I took over the management and I have worked for this firm for the last 28 years and as an MD for 20 years, I feel I need to retire but I have been for the last five years persuading my children living abroad to come and take over this factory but they have declined. I may not have a choice but to close down this factory"* (Fieldwork, 2006). There is also a positive correlation between exporting and manager's education level. This implies that export-oriented firms are more likely to have educated managers than the non-exporting garment firms.

Previous studies have indicated that the manufacturing firms owned by Africans are unlikely to venture into export markets because of costs and demands by international buyers (Lundvall *et al.* 2002; Bigsten *et al.* 2004). These firms may not have appropriate networks for providing linkages with global buyers as may be the case with foreign-owned firms who are able to exploit such linkages (Bigsten, 2002). This is even more critical for the garment industry whereby entry into global value chains is governed by buyers (Kinyanjui and McCormick, 2003; Gibbon, 2000). In our study, we find that African ownership has a negative correlation with export implying that African-owned firms are less likely than others to export. In section 8.7 we explore whether African-owned firms have lower technical efficiency than the foreign-owned firms.

---

<sup>79</sup> For details on correlation and hypothesis testing, see Wonnacott and Wonnacott 1990: 287- 323.

**Table 8.1: Correlation Matrix of Factors Determining Technical Efficiency<sup>80</sup>**

	Age	Size	CU	EXP	EXPD	MSkill	MAge	MEdu	Africa
Size	-0.39**								
CU	-0.29	0.29							
Export	-0.61**	0.65**	0.29						
ExpD	-0.067**	0.49**	0.36*	0.84*					
MSkill	0.41**	-0.17	-0.10	-0.55**	-0.63**				
MAge	0.16	0.05	-0.09	-0.20	-0.0.3*	0.66**			
MEdu	-0.13	0.27	0.17	0.51**	0.09	-0.614**	-0.44**		
Africa	0.07	-0.16	0.22	-0.09	-0.24	0.08	0.08	-0.22	
SPOV	-0.47**	0.63**	0.22	0.75**	0.02	0.38*	-0.02	0.36*	-0.20

Note: \*\* and \* signify significance at the 1 per cent and 5 per cent confidence levels, respectively

Source: Own Calculations.

In line with other studies notably Lundvall *et al.* (2002), the firm's age has a negative correlation with the manager's education measured as the number of years the manager spent schooling. This reflects a shift in the garment manufacturing firms' management, whereby new firms are employing relatively young managers. The negative correlation between a firm's age and managers' education implies that old firms have less educated managers while the new ones have more educated managers. In fact our results are consistent with previous studies notably Phelps *et al.* (2008) and reveals that most of the managers in the recent established firms are relatively young and highly educated.

Export is positively correlated to firm-size implying that large-scale firms are more likely to export garments. The high correlation between the dummy for participation in foreign markets and exporting implies possibilities of multi collinearity in the efficiency-effects estimation if the two variables are used jointly. Export is inversely related to the manager's skills, but has a positive and significant relationship with manager's education. This may be attributed to the fact that managers in exporting firms have spent many years in school and tend to have less experience in the garment industry.

<sup>80</sup> CU – Capacity Utilisation; EXP – Export Share of total output; EXPD – Dummy for Export; MSkill – Managers Skills; MAge – Managers age; MEdu – Managers Education in Years; SPOV – Spillover and Africa – Dummy for firms with African Ownership.

Firms which do not export have old managers with more experience in garment manufacturing activities. This may also mirror the fact that firms with young managers were more likely to be engaged in exporting compared to those with older managers in line with Clercq *et al.* (2005). Capacity utilisation is directly related to exporting and participation in foreign markets.

The Pearson's rank correlation indicates a strong association among the input variables in the production function with a 5 per cent significance level. This might be attributed to the noise expected to signal-ratio for the inputs and output, and caution should be exercised in the interpretation of the elasticities.<sup>81</sup>

### 8.3 Appropriate Tests for Technical Efficiency Estimation

For our empirical analysis both translog and Cobb-Douglas SFA models were estimated and statistically tested to select the function that best described the data. The estimation of the production frontier model was conducted using the maximum likelihood (ML) with the value-added of output as the dependent variable and capital and labour as the explanatory variables. The firm specific factors included in the technical inefficiency effects are firm-size, export, firm-age, managers' - skills and spillover.

The translog production function yielded results that confirmed the presence of inefficiency effects. Based on these estimations, we proceeded to identify the preferred model for inference about the efficiency of the garment manufacturing firms. Several hypothesis tests were conducted to allow us to select a preferred model for inference about the efficiency of the garment manufacturing firms (as discussed in section 4.3). Drawing from Kodde and Palm, (1996) and Wonnacott and Wonnacott (1990), hypothesis tests were conducted using the generalized likelihood ratio test defined in equation (4.11) and the results are presented in Table (8.2).

---

<sup>81</sup> Ngui (2008) and Greene (1993) argue that in efficiency studies, the statistical properties of the estimated coefficients are of less importance and that the most efficient variable estimator is employed for the input coefficient  $\beta$ , while the best that can be hoped for the estimation of technical efficiency is consistency.

**Table 8.2: Hypothesis Testing for Specification and Equality of Parameters**

	<b>Models</b>	<b>Log-likelihood</b>	<b><math>\chi^2</math>- statistic</b>	<b>Critical Value</b>
1	$H_0: \delta_3 = \delta_4 = \delta_5 = 0$	-14.555	2.884	7.82
2	Translog vs. Cobb-Douglas	-15.997	1.71	7.82
3	Truncated vs. half normal ( $H_0: \mu = 0$ )	15.078	0.128	3.841
4	No inefficiency ( $H_0: \delta_0 = \delta_1 = \delta_2 = 0$ )	-18.904	-7.524	7.045
5	No efficiency effect ( $H_0: \delta_1 = \delta_2 = 0$ )	-18.905	7.526	5.99

Note: The log-likelihood statistic of the translog function is -15.142

Source: *Own Computations*

Coefficients of the elasticities in the production model were insignificant in explaining output when we estimated a general translog function. Coefficients of three out of five explanatory variables in the technical efficiency effects were insignificant and had wrong signs. This indicated that the translog specification did not appropriately describe the data. Based on this finding, we tested for joint significance of the firms' age, managers' skills and spillover in explaining inefficiency effects in the garment industry. Based on the chi-square likelihood statistic of 2.88 against a critical value of 7.82, we do not reject the null hypothesis that jointly, these variables were insignificant. We therefore dropped variables (age, manager's skills, and spillover) in our subsequent estimations. After dropping these variables, results for the production technology and technical inefficiency effects improved considerably.

The estimation of the specified translog function with size and export as explanatory variables in the technical inefficiency effects improves our results in a number of ways. Magnitudes of input elasticities increase significantly and have expected positive signs. The inefficiency effects have expected signs and are statistically significant. All variance parameters improved considerably. The likelihood ratio increases to -15.142 (as reported in Table 8.2) which was greater than the critical chi-square statistic allowing us to reject the null hypothesis of 'no inefficiency effects' among the garment firms in the sample.

The second test is about model specification. The translog specification was tested against the Cobb-Douglas specification to choose the functional form representing the data well. The  $H_0$  stated that the Cobb-Douglas model specification represented the data well given the translog. The likelihood ratio tests for specification of the production function indicated that we could not reject the null hypothesis that Cobb-Douglas is preferred to the translog specification despite the

restrictions imposed by Cobb-Douglas specification on the model. With a log-likelihood value of -15.997, the  $\chi^2$ -statistic was 1.71 while the critical value was 7.82 (see Table 8.2).

This is reinforced by the fact that the translog specification results did not yield coefficients of plausible signs and magnitude possibly due to degrees of freedom or multicollinearity. We argue that the sample data does not comply with the translog specification. According to Berndt and Christensen (1973:84 ff) "*A production function is usually considered to be well behaved only if output increases monotonically with all inputs and its isoquants are convex*". Based on these findings the Cobb-Douglas specification is preferred to the translog specification in our study.<sup>82</sup>

Previous studies notably Lundvall *et al.* (2002) and Ngui, (2008) adopted the Cobb-Douglas function because of its small number of parameters and the poor performance of the translog specification regarding regularity conditions. Bigsten *et al.* (2004:124) find that the Cobb-Douglas specification provides a more adequate representation of data than the translog production function. Chirwa (2007) adopts the Cobb-Douglas production function because of the relatively small sample size in the study. Ajibefun and Daramola (2003) and Tybout (1992) adopted Cobb-Douglas technology observing that census data are unlikely to support more elaborate (translog) functional forms. The discussion in this study is restricted to the Cobb-Douglas functional form despite the restrictions it imposes on the elasticity of substitution between factors.<sup>83</sup> Measurement of technical efficiency is insensitive on the choice on the choice of functional form since its main concern is with the shift of isoquants, rather than their shapes.

The third test was based on the null hypothesis that the inefficiency component had a half normal distribution was not rejected. With a log-likelihood ratio of -15.078, the  $\chi^2$ -statistic was 0.128 against a critical value of 3.84.

---

<sup>82</sup> It is pertinent to note that, the Cobb-Douglas frontier is the restricted form of the translog frontier in which the second order terms in the translog function are restricted to zero (Ajibefun and Daramola, 2003; Bigsten *et al.*, 2004). The use of the Cobb-Douglas functional form is supported by its simplicity and relatively small data requirement. In addition, a logarithmic transformation provides a model which is linear in the logarithm of inputs and hence it is easy to measure (Coelli, *et al.* 1998:201). Empirical studies have shown that Cobb-Douglas actually gives better results compared to the translog particularly when the sample size is small (Ngui, *et al.* 2007; Chirwa, 2001; Ajibefun and Daramola, 2003).

<sup>83</sup> For instance, the Cobb-Douglas function has constant input elasticities and returns to scale for all firms in the sample. Furthermore, the elasticities of substitutions are equal to one. For more details, see Ngui, *et al.* 2007; Bigsten *et al.* 2004; Ajibefun and Daramola 2003; and Lundvall and Battese, 1998.

The fourth null hypothesis that inefficiency was absent from the model was rejected, implying that all firms were not technically efficient and that there was room for efficiency improvement. The average response function, in which all garment firms were assumed to be fully efficient, was not an adequate representation of all firms. These results are in keeping with Ngui (2008) and Söderbom (2001) who found that inefficiency effects were present in all the manufacturing sectors in Kenya. This is evidence that deviations from the best practice were not entirely due to noise, but also due to stochastic inefficiency. This test is supported by the value of the gamma parameter ( $\gamma$ ) estimate of 0.5225 which implies that a proportion of the total variability is associated with inefficiency of production.

The fifth test is based on the null hypothesis that the coefficients of all the variables (constant excluded) in equation (4.11) that is  $\delta_1$  and  $\delta_2$  were simultaneously equal to zero, such that the two independent variables were insignificant in explaining the technical efficiency differences among garment manufacturing firms. This implied that the joint effects of the two independent variables may not be statistically significant (Battese and Broca, 1997). This hypothesis was again rejected because the  $\chi^2$ -statistic was 7.526 against a critical value of 5.99. This shows that the joint effect of the selected variables is statistically significant at 5 per cent and that these variables influence technical efficiency scores in the garment industry. The model indicated a strong convergence and when re-estimated with different sets of starting values, the model gave the same maximum likelihood estimates implying attainment of the global maximum (Coelli, *et al.* 2005:219). Convergence occurs when the first derivatives of the log-likelihood function, that is, the gradients are close to zero. The Oxmetrics programme automatically indicates when a model converges.

We also carried out heteroscedasticity test using the White test (see discussion presented in section 4.3) and multicollinearity using the variance inflation factors (VIF). The White test indicated that there was no heteroscedasticity in the model. The null hypothesis of homoscedasticity with a reported probability value below 0.05 leads to the rejection of the stated null hypothesis (see Kumbhakar, 1997; Wang, 2002).<sup>84</sup> The variance inflation factor (VIF) measures the impact of collinearity among independent variables in a regression model or the precision of estimation. According to Greene (2003), the VIF shows how the variance of an estimator is inflated by the presence of multicollinearity. A VIF will be one (1) if there is no

---

<sup>84</sup> These results are provided in Appendix 6.

collinearity between any two independent variables while it will increase as the extent of collinearity increases. The results of the VIF are presented in Table (8.3).

**Table 8.3: Multicollinearity Tests for the Garment Industry**

<b>Variables</b>	<b>VIF</b>
Capital and Labour	1.000
Firm size	1.791
Exports	2.071
Firm age	1.058
Spillover	1.876
Managers' skills	2.401

*Source: Own Computations*

Results from the variable inflation factor demonstrate that colinearity among the analysed variables was low. This is consistent with the results of bivariate Pearson's Rank correlation (Table 8.1). Other tests indicated that given the translog model, the Cobb-Douglas functional form including inefficiency variables assuming half-normal distribution is the preferred model. Therefore, the discussion that follows relates to economic interpretation of the parameters for the preferred stochastic production frontier (Cobb-Douglas function) as presented in Table 8.4.

**8.4 Technical Efficiency Estimates (Elasticities)**

The parameters of the input variables in the production function (production elasticities) are positive as expected and statistically significant at 5% and 1% level, respectively. This indicates that capital and labour are important inputs in the garment production in Kenya. As expected the labour elasticity (0.782) is higher than the one of the capital (0.145) which can be attributed to the labour intensity of the industry. Labour is an important input in the garment manufacturing activities. This is expected since garment industry all over the world is considered as labour intensive and therefore suitable as first rung on the industrialization ladder as it forms a typical 'starter' industry for developing countries engaged in the export oriented growth (McCormick and Rogerson, 2004; World Bank, 2007; Brenton and Hoppe, 2007).

**Table 8.4: Results of Cobb-Douglas and Inefficiency Effects**

Variable	Parameter	Coefficient	t-ratio
<b>Production function</b>			
Constant	$\beta_0$	1.890***	3.28
ln Capital	$\beta_1$	0.144**	1.97
ln Labour	$\beta_2$	0.782***	7.72
ln ( $\sigma_u$ )	$\theta$	-1.172***	-10.60
<b>Inefficiency Effects</b>			
Constant	$\delta_0$	1.134*	1.18
lnSize	$\delta_1$	-0.649***	3.77
EXPT	$\delta_2$	-1.028***	2.77
<b>Variance Parameters</b>			
$\gamma = \sigma_u^2 / \sigma^2$	$\gamma$	0.5225	
Log Likelihood		-15.997	
Returns to Scale (RTS)		0.926	
CRTS ( $\rho$ -value) <sup>a</sup>		0.1707	
No. of Parameters		7	
Observations	N	44	

- \*\*\* Statistically Significant at 1% level
  - \*\* Statistically Significant at 5% level
  - \* Statistically Significant at 10% level
  - a Wald Test of the  $H_0$   $\ln(\text{capital}) + \ln(\text{labour}) = 1$
- Source: Own Computations

Previous studies have indicated the significant role played by this industry in Kenya. For example, McCormick *et al.* (2007) argues that being labour-intensive the garment industry is critical as a rung on the industrialization ladder; Omolo (2006) shows how the industry is an appropriate avenue for poverty reduction strategy because of mass employment particularly low skilled female workers. Other studies have shown the significance of the garment industry in the development agenda in Kenya (World Bank 2007, Brenton and Hoppe 2007, Kinyanjui *et al.* 2004). Our results based on statistical analysis appear to corroborate findings of these studies. The production elasticity for labour is larger compared to that of capital which is consistent with other studies on the Kenyan manufacturing sector (see for example, Ngui *et al.* 2007; Lundvall *et al.* 2002; Lundvall 1999). The low productivity for capital may be attributed to low capital requirement in garment manufacturing activity. The estimated return to scale is 0.926 which as expected indicates that garment production is conducted close to constant returns to scale. This implies that consistent with previous studies, production function is not significantly different from unity (see for example, Bigsten *et al.* 2004, Chirwa 2001).

## 8.5 Technical Efficiency Distribution

The mean technical efficiency level among garment manufacturing firms is 83.1%, with a standard deviation of 12.8% and a range from 48.8% to 97.5% (Table 8.5). Although the mean technical efficiency scores are high they compared to those obtained in other related studies. For example, Lundvall, *et al.* (2002) find a mean efficiency of 75% for the textile sector, while Ngui (2008) finds an average technical efficiencies of between 60.3% and 67.8% for the period 1991/92-1994/95 and 2000/01 -2002/03, respectively. In Côte d'Ivoire, Chapelle and Plane (2005:1316) obtain a technical efficiency score of 81% for the textile and garment industries. The high mean technical efficiency score for the industry dramatizes the point that firms needed to be very efficient to survive the buffeting effects of 2005 MFA termination which affected the garment industry.<sup>85</sup>

The analysis draws from a remnant of firms so that results are bound to be peculiar. It can be argued that the high mean score of technical efficiency can also be attributed to intra-plant improvements which are common in the garment industry as a result of subcontracting. Approximately 48 per cent of the firms in our sample were totally export-oriented which are continuously improving their efficiency in production in order to compete in export markets. By focusing on the garment industry we eliminate possibility of heterogeneity common in multi-sectoral manufacturing studies.

**Table 8.5: Summary Statistics of Technical Efficiency Estimates**

Mean	0.831
Standard Error	0.019
Median	0.873
Standard Deviation	0.128
Skewness	-1.005
Minimum	0.488
Maximum	0.975
Sum	36.547
Count	44

*Source: Author's Own Computations*

The maximum technical efficiency value was high (0.975) implying the existence of very efficient firms in the industry. This is consistent with the findings by Ngui (2008) who found that

<sup>85</sup> See further distribution of technical efficiency scores in Appendix

“the maximum technical efficiency scores in the Kenyan manufacturing sector were the highest in the textile sub-sector in both periods 1991/92-1994/95 and 2000/01-2002/03 compared to other sub-sectors”. The competition experienced following the MFA termination in 2005 may have enticed firms in both the domestic and export markets to enhance efficiency as survival strategy. This could also be attributed to the fact that more than half of the firms in the sample were export-oriented, an indication of intra-plant improvement consistent with learning-by-exporting arguments. A caveat is necessary in our assertion here. We did not perform causality tests to determine if firms were gaining efficiency through exporting or efficient firm self-selected to venture in the export market. However, following Bigsten *et al.* (2004), we could argue that exporting facilitates efficiency among garment manufacturing firms.

The estimated technical efficiency for exporting and non-exporting firms indicate that the average technical efficiency score for the exporting firms was higher (0.844) than that of non-exporting firms (0.807), implying that exporting firms were more likely to be efficient than non-exporting ones. Using the Mann-Whitney Test (<http://faculty.vassar.edu/lowry/utest.html>), whose null hypothesis was that average technical efficiencies for both export and non-exporting firms were equal, was rejected.<sup>86</sup> The Mann-Whitney test yielded a probability value of 0.0108 implying that the average efficiency scores varied significantly across the two samples.

These results were further confirmed by including an export dummy in our technical inefficiency estimation, which again yielded a negative and statistically significant coefficient; implying exporting firms were less inefficient than non-exporting firms. We conclude that participation in export markets by garment manufacturing firms may yield positive impact on the efficiency, in keeping with Kimuyu (1999) and Bigsten *et al.* (2004).

We also compared technical efficiency score of the firms inserted in a single value chain vis-à-vis those in multiple chains. The objective was to anchor our analysis on the value chain literature which appears to support participation in multiple chains. The results showed that the average technical efficiency score for the exporting firms in multiple chains was higher (0.872) than that of single market (0.817). This implies that firms in multi-chains are more efficient than those in single-market.

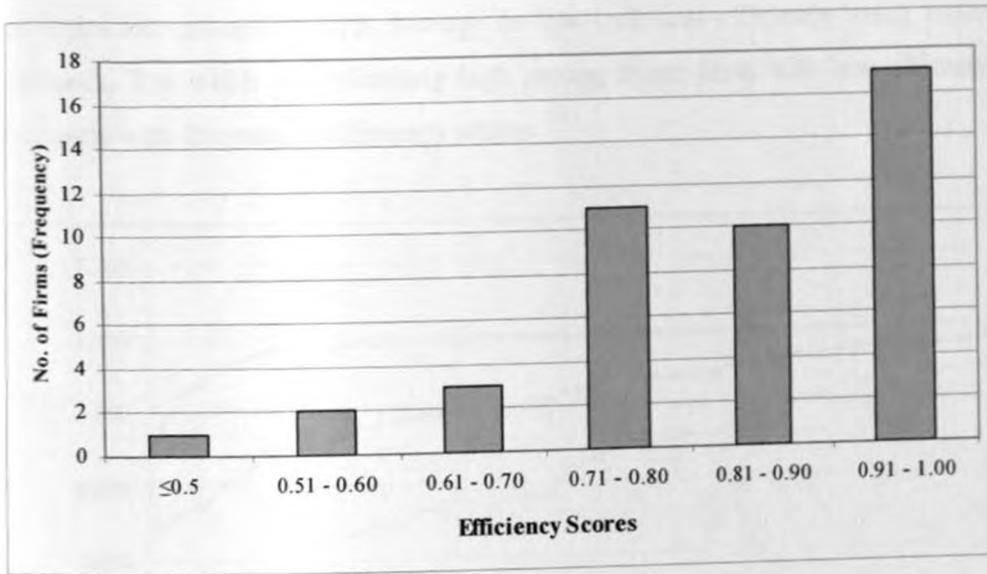
---

<sup>86</sup> The Mann-Whitney Test was more appropriate than ANOVA in measuring difference in sample means in our study because technical efficiency values are not normally distributed.

Previous studies on Kenyan manufacturing have insinuated that firms whose key managers are of African origin tend to be less productive than those with other forms of management (Lundvall *et al.* 2002). The main argument is that, managers of African origin being late-starters, have relatively shorter duration for learning-by-doing, lack access to financial and other related resources (Lundvall *et al.* 2002:63). In the study, I tested this by examining whether the mean efficiency score for firms with African managers was statistically different from that of firms managed by non-African managers. The mean efficiency scores were 0.747 and 0.849 for firms whose main decision maker was of African origin and non-African, respectively.

Using the Mann-Whitney Test of equality between means of the two samples was rejected, yielding a value of 0.0301 implying that the average efficiency score varied significantly across the two samples. We argue that these findings are consistent with Kimuyu, 1999 and Fukunishi, *et al.*, 2006 underpin the need for use of networks in getting linkages with key actors in garment value chains or else a firm will have low efficiency scores. Firms with non-African managers tend to marshal financial resources that can facilitate technical efficiency (Lundvall, 2002; Schmitz, 2006). By being in close contact with international buyers exporting firms learn a great deal about how to improve their production processes, attain consistency, high quality and increase their speed of response to customer orders which is consistent with learning-by-exporting hypothesis.

The distribution of the technical efficiency has important implication on the precision of out technical efficiency estimates. As expected, the spread of efficiency effects was negatively skewed (see Figure 8.1). This shows that most firms experienced a systematic improvement in average efficiency score.



**Figure 8. 1: The Distribution of Efficiency Scores among Garment Firms**

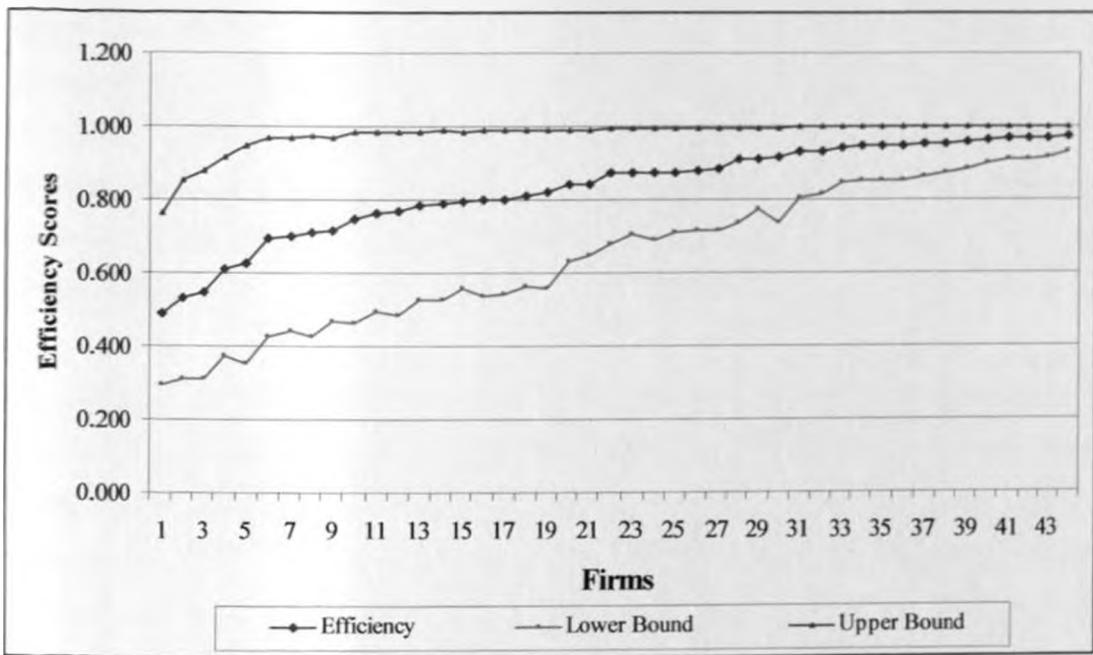
*Source: Own Computations*

The economic interpretation of this finding is that most observations were clustered near the efficiency frontier and that the number of firms declined steadily with rising inefficiency. For the Kenyan garment industry, this finding means that the medium- and large-scale garment firms have capability to compete effectively in the global garment trade given the high concentration of technical efficient firms. There is ample opportunity for the analysed firms in the garment industry to raise their level of efficiency depending on the policy variables that determine technical efficiency.

## 8.6 Confidence Intervals

The point estimates did not have standard errors and therefore one cannot infer about their significance levels. Confidence intervals for the individual estimates of the efficiency scores were constructed using an approach proposed by Horrace and Schmidt (1996) as described in equation (4.14), (4.15) and (4.16) and presented in Figure (8.2). The idea is to present the distribution of technical efficiency scores with their corresponding upper and lower bound at 95 percent confidence interval. "This approach helps a researcher to determine the precision with which the technical efficiency estimates are obtained" (Horrace and Schmidt 1996:274). Figure 8.2 shows that the confidence intervals are wide but decrease as efficiency scores increase. Apart from the confidence interval being wide, the width varies considerably making it hard to separate

the firms into groups of high, average or low technical efficiency using individual efficiency estimates. The width is particularly high among those firms with low efficiency scores and it decreases with increase in efficiency scores.<sup>87</sup>



**Figure 8.2: Point Estimates and Confidence Intervals for Garment Firms**  
*Source: Own Calculations*

It should be pointed that drawing from Figure (8.2) we are not able to determine conclusively about the precision attached to efficiency estimates in our study. Other studies have indicated that confidence intervals are conservative in measuring the confidence and dispersion in efficiency (Battese *et al.*, 2000). Given that our study does not have time variant (being cross-sectional) we can assume that technical efficiency estimates are associated with uncertainty and lack of precision. Therefore, caution should be exercised in the interpretation based upon the point estimates.

<sup>87</sup> See Appendix 7 for the data set used to plot Figure 8.2.

## 8.7 Technical Efficiency Determinants

We now turn to the estimation of factors determining technical inefficiency in the garment industry. Our results indicate that the two explanatory variables (firm size and export) had expected negative signs and were statistically significant at one percent level. These variables had a positive effect on efficiency. Initially we had included other associated variables in the estimations and their inclusion affected the coefficients of size, export and the distribution of technical efficiency scores. We have omitted them in our final model whose results are reported in Table (8.5).

The coefficient of the firm size measured as the number of workers in the firm was negative and statistically significant; suggesting that firms with more workers produced garments more efficiently compared to those with fewer workers. This was expected and reinforces our earlier argument that being labour intensive, garment production efficiency increases with the number of workers. Firms that employed more workers showed a reduced variation in technical efficiency. This finding is consistent with Jovanovic's (1982) theory and other empirical studies which found a positive relationship between firm size and technical efficiency. Ngui (2008); Lundvall *et al.* (2002); Lundvall and Battese (1998) and Kimuyu (1999) found a positive relationship between firm size and efficiency in the case of manufacturing activities in Kenya, while Mengistae (1996) and Söderbom and Teal (2004) also found a positive relationship in the case of Ethiopia and Ghana. In line with other studies, we find a strong size effect on the decision to export such that if a firm grows, its potential to export also grows.

The export value coefficient was negative and statistically significant, suggesting that an increase in the export value would significantly increase technical efficiency. This could be attributed to learning by exporting hypothesis in the industry. As a firm participates in the more competitive export markets, they get into contact with international buyers with strict quality requirements that compel the firm to increase its production efficiency. In other cases, buyers were collaborating with Kenyan firms with a view to improving the latter's. Exporting firms tended to be more efficient than the non-exporting firms. It is important to recognise the feedback mechanism between exporting and technical efficiency. There is evidence to suggest that the feedback could also be in reverse such that firms that are efficient choose to export.

This finding is consistent with other empirical studies which find positive relationship between exporting and technical efficiency (Bigsten *et al.* 2004; Aw and Hwang, 1995; Blattman *et al.* 2004; Clerides, *et al.* 1998). The finding that exporting promotes performance of garment firms points the need of harnessing locally owned garment firms to participation in the export markets.

The recently introduced incubator programme by the EPZA that aims at supporting locally-owned industries to enhance their participation export market is undoubtedly a move in the right direction.

## 8.8 Conclusion

This chapter analysed empirical results of technical efficiency and its determinants using stochastic frontier analysis model (SFA). Data relating to this study was mainly collected among the medium and large garment manufacturing firms in Kenya. Our results reveal that technical inefficiency is present in the Kenyan garment industry, which make firms not produce at the production possibility curve and that the deviation from the best practice is not only due to noise but also due to technical inefficiency.

In the production function, capital and labour were found to be statistically significant in explaining output. Labour elasticity was higher than that of capital perhaps an indication of the labour intensity of this industry. Garment production is conducted close to constant returns of scale. The analysis on the determinants of technical efficiency revealed that firm size and export are statistically significant in explaining inefficiency in the garment industry. The high level of technical efficiency (83.1%) demystifies the existence of intra-plant improvements due to most firms being export-oriented. While exporting and firm growth are important for enhancing technical efficiency, they are a necessary condition for industrial upgrading.

Comparison of technical efficiency for firms exporting to multiple markets and those in single markets shows that those in multiple export markets have higher and significant score than the latter. This is consistent with industrial upgrading analysis suggesting that the nature of the export market matters. In value chain terms, governance structure determines the level and nature of upgrading experienced by local firms.

Evidence suggests that firms inserted in GVCs characterised by a hierarchical relationship may only experience process and product upgrading. It is only in the balanced network or market relationships that functional upgrading is likely to occur. There is need to pursue policies that promote diversification of export markets by locally-owned garment firms.

## CHAPTER 9

### SUMMARY AND CONCLUSIONS

#### 9.1 Summary

The role of garment industry in economic development in Kenya cannot be underestimated. The industry contributes immensely in terms of employment creation, industrialisation process, export diversification, poverty reduction and participation in the global trade. Its low skills requirements and large labour absorption potential have been an important source of non-agrarian employment in developing countries. Moreover, it offers tremendous prospects for employment of female workers unlike other traditional manufacturing sectors. The industry also has strong forward and backward linkages with other sectors of the economy.

In spite of all these benefits, the industry has performed below its potential due to a number of factors:

- (1) Having expanded tremendously during the ISI policies, it was not able to cope with realities of economic liberalisation, which saw domestic and regional markets diminish drastically.
- (2) For a long time, global trade in textile and clothing operated outside the purview of GATT, and was regulated through the quota regime which to a large extent curtailed the growth of this industry in Kenya and other developing countries.
- (3) The termination of MFA in 2005 has not resulted in significant gains for Kenya due to fierce competition from the two most efficient producing countries (China and India), which were initially controlled through quota systems. Safeguard measures negotiated by the US and EU for China to control its exports to these leading world markets have come to an end, implying that competition is bound to increase further, crowding out emerging economies like Kenya in the global trade in garments; the only industry that could spur industrial development in this region.
- (4) Market access initiatives such as AGOA remain the only hope for Kenya's participation in the global clothing trade
- (5) Global trade in textiles and clothing is organised in networks called Global Value Chains, which producers need to get inserted into in order to access the markets. Apparently, these value chains are controlled by buyers, who are the key actors in most of buyer-

driven chains. Unless producers in Kenya establish linkages with the leading strategic actors, their efforts to penetrate the global market will be futile (Gereffi, 1999, 1994; Schmitz and Knorringa, 2000; Gibbon 2000, 20001, McCormick and Schmitz, 2002).

The central position in global value chain (GVC) research is that trade with developed countries for most labour intensive products is increasingly being coordinated by global buyers that are strategically placed in the chain who determine how production is done, by whom, when and where. One of the frequently fronted arguments is that upgrading opportunities for garment producers based in developing countries (Kenya included) is often structured along the relationship with global buyers. 'Global buyers' do more than place orders; they actively help to create, shape, and coordinate the global value chains that supply their products, sometimes directly from 'overseas buying offices', and at other times through intermediaries, who include a wide range of actors, most notably trading companies based in Hong Kong, China, India Korea and Japan (Sturgeon, 2007; Gibbon, 2000). The volume of purchases affords global buyers a huge amount of power over their suppliers, which they sometimes use to specify in great details what, how, when, where and by whom the goods they sell are produced.

Gereffi (1999:39) argues that participation in global commodity chains is a necessary step for industrial upgrading because it puts firms on potentially dynamic learning curves. This is corroborated by studies in this area which posit that the success of developing countries in terms of enhancing their capabilities, and by extension technical efficiencies, is hedged on their insertion in global value chains, informed by 'learning-by-exporting' hypothesis. Recently, studies based in developing countries have indicated that entry into the global value chains is not a sufficient condition for upgrading by local producers (Bazan and Navas-Alemán, 2004; Kishimoto, 2004; Navas-Alemán, 2006; Tewari, 2006). These studies, which have shown that participation in quasi-hierarchical GVC emphasise process and product upgrading at the expense of functional upgrading. Similarly, firms that participate in value chains characterised by market-based governance structure, common in the domestic value chains are more likely to experience all forms of upgrading than those operating in GVC.

While this proposition may hold for large developing economies like Brazil and India, evidence from small developing countries is lacking, more so in the case of the garment industry. This study was designed to add to this body of knowledge by examining whether insertion in GVC

remains the only avenue for upgrading for small economies like Kenya. In addition, this study examines the technical efficiency of the garment industry with a view to elucidating the controversial 'learning-by-exporting' hypothesis.

## **9.2 Research Arguments - Recast of the Study**

The purpose of this study was to empirically analyse upgrading patterns for garment firms participating in different garment value chains in the Kenyan industry. More specifically, this study analyses process, product and functional upgrading for firms in four main chains, whose governance structures are different, namely the US value chain (classic quasi-hierarchy), European value chain (hybrid of quasi hierarchy and balanced network), and domestic and African regional chains (both of which are market-based). Our central theme in this study was that governance structure in garment value chains and how this may impact on upgrading potential. This was informed by hypotheses described in section 4.4.

The study was carried out on the basis of cross-sectional survey data collected among 44 medium- and large-scale garment manufacturing firms in Kenya. The fieldwork for this study was carried out in 2006. This survey data was supplemented with ten case-studies purposively selected among firms included in the survey. In addition, key-informant interviews were carried out in Kenya and North America with a view to gathering more insights on the operations of the industry and policy issues regarding garment trade and firm upgrading. Among the key informants of this study were government officials, associations, trade unions, local and international buyers.

Our study was informed by two main theoretical frameworks: the global value chains analysis and technical efficiency rooted in the economic theory of production. In addition, the new institutional economics theory, business systems and firm theories were used. Drawing from these theories, a conceptual framework for examining upgrading patterns and technical efficiency effects was developed.

This chapter brings together evidence of how the study is organised: what was established by way of empirical findings, what has been learnt, limitations, and more importantly what remains to be discovered in this area. The study is organised along chapters that cover the pertinent

aspects of the issues under investigation. Chapter one lays the background information, defines the research problem, and outlines the objectives of the study. This is followed by a discussion on the evolution and current status of the garment industry in Kenya in Chapter 2. Chapter 3 reviews theoretical and empirical literature related to the garment industry, value chains and technical efficiency; while Chapter 4 develops a conceptual framework for the study. Chapter 5 discusses the research methodology and design adopted for this study. Empirical findings are presented in Chapters 6, 7, and 8. Chapter 6 presents the general characteristics of the firms included in the survey, while Chapter 7 examines upgrading patterns for garment firms inserted in various chains. In Chapter 8, results from technical efficiency estimations based on stochastic production function model are presented.

### **9.3 Discussion of the Findings**

#### **9.3.1 General Characteristics of Garment Firms in Kenya**

The garment industry in Kenya is quite diverse. It consists of firms of varying sizes, age, technology production, and markets. The micro and small enterprises were not included in this study because of their unique characteristics, which make their production activities different from the medium- and large-scale manufacturers (McCormick *et al.* 2002; Kinyanjui and McCormick, 2003). The average size of firms included in this study was 468 workers, with the largest firm having 2,300 workers. The smallest firm had 20 workers. Further analysis show that more than 60 per cent of workers in the industry were female, which is in line with previous studies that have found that the clothing industry is dominated by female workers (World Bank, 2007; Nordås, 2005; Brenton and Hoppe, 2007). On issues to do with the age of the firms, the study found the mean age to be 16 years, with a maximum of 84 years and a minimum of 1 year. However, a vast majority of large-scale firms were relatively young, having been established around 2001, which is attributed to the enactment of US-AGOA.

Firms in this industry can be classified into three categories: the EPZ, MUB and the local firms, depending on the export platform that a firm operates in. For the purposes of this study 16 firms were drawn from the EPZ programme, 4 from the MUB, and 24 from the local category. Cross tabulations between firm age and export platform indicated that most firms in the EPZ programme were less than 10 years old, further confirming the author's argument that firms in

this programme were established mainly as a response to the enactment of AGOA in 2000. Similarly, a cross-tabulation of export programme and sizes indicated that large-scale firms were found in the EPZ and MUB, while those in the local category tended to be smaller in size (medium- and large-scale). The entrepreneurial orientation, capturing the management of the firms shows some diversity, with young firms, large, export-oriented firms engaging relatively young and educated managers, while the old local firms have relatively old and less educated managers. Obviously, drawing from Clercq *et al.* (2005), firms' management attributes play a central role in the participation in export markets and hence internationalisation of activities. This has a bearing on insertion in upgrading and technical efficiency of a firm.

On market destination, firms were divided according to the destinations of their products: those selling in the domestic market, African regional market and global markets. In the global markets, the US was found to be the single most important export market for Kenyan garment products, followed by the Europe, accounting for 85% and 10% respectively of garment exports in 2006. The regional market is recuperating after almost a decade of low performance following trade liberalisation in the 1990s. Some firms combine two or more markets. The sampled firms were exporting to the EU while another five the regional market and the domestic market. Two firms were involved in the three markets: domestic, African regional and the European markets. The US market is somewhat unique because firms exporting to this market did not show signs of diversifying into other markets.

Most of the firms in the study sample bought all the necessary fabrics from textile firms in Kenya or overseas. Increasingly, firms are relying on imported raw materials because of costs, quality and supply flexibility. In the case of EPZ and MUB firms exporting to the US, fabric is imported from a buyer-nominated supplier or source by the parent company. A majority of these fabric suppliers located in China, India, Pakistan, Hong Kong, Taiwan, and Sri-Lanka. Although technology differed across firms, majority of the firms (90%) adopted assembly-line production processes. Respondents argued that assembly-line production enhanced productivity from the firm point of view compared to make-through processes. Only those firms in the lower category of medium scale were using make-through processes. Production machines used in the Kenyan garment industry were sourced from diverse suppliers. Large firms imported their machinery directly, while medium-scale firms imported specialised machines while at the same time buying standard machinery in Kenya. In Kenya, machines would be bought from local assemblers or

import traders who imported a complete machine. There was also increasing use of second-hand machines, which were bought from firms that had closed down. Generally, the nature of machinery varied among firms, depending on the operations undertaken by firms. In this respect, machinery could be categorised into knit wear and woven wear machinery. The most common brands of industrial machines used in the industry are Juki and Kansai models mostly imported from Asian countries.

In terms of products, T-shirts, polo-shirts, sportswear, men-shirts, ladies tops and skirts, and jeans were common among many firms, irrespective of their size and operation platforms. Three (3) firms in the export category specialised in jeans manufacturing, while another five (5) specialised in t-shirts and sportswear manufacturing. Other firms had a combination of knit and woven garments with separate lines for each type of production. Recently, most of the local firms have specialised in the manufacturing of industrial and institutional uniforms.

### **9.3.2 Prospects for Upgrading in the Kenyan Garment Industry**

Literature on global value chain stresses the fact that each activity in a chain adds value to the final product. Moreover, gains accruing to actors in a chain are determined by the value attached to the activities that they undertake. In the case of the “buyer-driven” garment value chain, profitability accrues mainly to designing, branding, and retailing. In GVCs, powerful buyers within the chain control activities of the value chain supplying their brands. GVCs’ participation in global value chains is therefore a precursor for firms to acquire upgrading, which is associated with increased gains.

Upgrading is defined as a process that involves changes in the nature and mix of activities, both within each link in the chain and in the distribution of intra-chain activities. Upgrading is essential in replacing low-paid activities with activities that command higher returns (McCormick, 2007; Kaplinsky and Morris, 2002). Four types of upgrading have been identified: process, product, functional and chain upgrading. Based on previous studies and experience in the fieldwork, this study was confined to the first three types of upgrading; namely process, product and functional. Our findings revealed that the governance structure of a value chain determined the nature of upgrading the local producers experienced. The governance structures considered in our study included market, balance-network, quasi-hierarchy (directed network),

and hierarchy (Gereffi 1999; Bair and Gereffi, 2001; Humphrey and Schmitz, 2000; McCormick and Schmitz, 2002). The central theme of our study was to compare upgrading potential for firms inserted in different garment value chains.

Looking at the garment industry in Kenya, four major value chains were identified: US value chain (quasi-hierarchical), the European value chain (balanced network), the domestic value chain (market-based) and the African regional value chain (market-based). In total, 20 firms were inserted in the value chain leading to the US market, while four were in the value chain leading to the European market. The domestic market value chain had 24 firms, of which five were also inserted in the regional market value chain. Moreover, this study found that the four firms in the European market were also inserted in the domestic market, so were the five in the regional market. More interesting was the finding that two firms were actually participating in the three value chains, namely; domestic, European and African regional markets. The study found that firms which participated in multiple value chains demonstrated higher opportunities for upgrading than those inserted in GVCs (see Table 7.1).

The US value chain is unquestionably the largest export market for Kenyan garment products. Available statistics indicate that the US market absorbs more than 85 per cent of the garment exports on average since 2002 (EPZA, 2008). Global buyers in this chain are undeniably powerful and exert enormous control on all other actors in the chain. In keeping with other previous studies, strategic activities within this chain, notably the design, branding, and distribution are undertaken by powerful global buyers. Additionally, this value chain has a high concentration of buyers and intermediaries who supervise supply chains. With regard to upgrading, the study shows that the nature of governance structure, global value chain leading to the US market, a classic example of quasi-hierarchy, supports processes and product upgrading. However, functional upgrading is not supported as this may threaten buyers' core competence (see Palpacuer, 2000; Gibbon 2000; Schmitz, 2006). Buyers' power is however not the only obstacle to functional upgrading. The investment required is substantial and entails risks as demonstrated by Gibbon (2000) and Bair and Gereffi (2001).

On the value chain leading to the European market, the study established a balanced network whereby buyers and producers collaborate to either develop designs or to procure raw materials for mutual benefit. The European market share of the Kenyan garment export is small.

accounting for less than 10 per cent of total garment exports. Nonetheless, it is a significant market for Kenyan garment products. In this value chain, buyer concentration is low, and so is the use of intermediaries. Strategic activities in this chain are fairly shared by both producers and the buyers. Although buyers have high demand for quality production, they allow producers to market their own brands. None of the firms in this chain were manufacturing for the European market, which is a big variation from the US value chain. This kind of governance structure appears to promote process, product and functional upgrading, albeit in a limited way. Moreover, firms in this chain use knowledge acquired in the export chain to promote their production activities in the domestic market. It is therefore not surprising that in the domestic market, these firms target high-end and tourist customers. What these firms may need to do is to harness their skills in designing and branding so as to move to design-intensive export niches as a way of getting out of direct price competition with volume-based Chinese exporters.

The value chain leading to the domestic is governed by market-based relationships. In this value chain, buyer concentration is generally low, and the relationship between the producers and the buyer is governed through arm-length transactions. Courtesy of market-based relationships, products are fairly standardised and producers carry out marketing activities either directly or through sales representatives. Firms make independent decisions about what to produce, how to source raw materials and the price at which products are sold. Most producers in this value chain have recently shifted from producing standard garments to promotional materials and uniforms due to stiff competition in the domestic market. Although to a limited degree, process upgrading is taking place as some firms modernise their production machinery. They are doing this by buying modern machinery from local EPZ firms who have shut down their operations in Kenya. On product upgrading, some firms have begun to add value to their garment products by adopting embroidery and printing. Most of the garments produced by these firms are designed internally and were sold with the firms' respective brand names. Firms in this chain are increasingly promoting their less known brand names (Tewari, 2006). A major limitation towards upgrading remains inadequate funds. Nonetheless, the fact that these firms control strategic activities implies that they have potential to upgrade.

The African regional chain is gradually gaining prominence. Among the sampled firms, five were inserted in this chain, even though they were combining it with the domestic chain. The market share in this chain is small but shows prospects for growth. Firms were optimistic that

experience in this chain may trigger their expansion to other regions in future. This finding is consistent with an argument posited by Clercq *et al.* (2005:411) that 'internationalisation' begins by firms entering the markets of the neighbouring countries before venturing into distant markets. The governance structure in this chain is a market-based relationship whereby producers are in charge of strategic activities in the chain. The use of marketing representatives is more common in this chain than in the domestic value chain. The entry into these markets is characterised by goods of higher value such as corporate uniforms, military uniforms and tourists' casual wear. This certainly offers a different approach to penetrating export markets from that of the 1980s whereby firms exported standard garments. This reinforces the need to create market niches in penetrating export markets. The fact that firms in this chain market their own brands is an indication of potential for functional upgrading. More importantly, firms in this value chain were also strong players in the domestic market while others also supplied European markets. This somehow provided requisite synergy for remaining competitive in all these markets.

Lastly, the impact of institutions on the geography and character of value chains can be profound. According to this study, institutions were conceptualised as the rules that govern society, either bureaucratically, as codified in legal canons and regulatory systems, or existing more amorphously, though perhaps no less powerfully, in the realm of societal norms and expectations (North, 1990; Sturgeon, 2007). It was clear from fieldwork that firms clearly adapt in response to institutional pressures. Further, the study argues that by setting the rules that firms should operate within, "institutions ... shape the creation and functions of units in markets and the relations between them" Sturgeon (2005). For example, the termination of MFA, China's accession to the WTO, AGOA, US and EU Safeguards, and National regulations, form a structure of institutions that shape the landscape of the operations of garment firms. This study demonstrates that firm-level, national-level and global institutions affect operation and performance of garment manufacturing firms in Kenya. At the national level, institutions such as state, markets, and financial systems play a critical role in promoting or impeding industrial upgrading of garment firms. On global institutions, the AGOA enactment in 2001 and the termination of MFA in 2005 are most fundamental in the upgrading process of the garment industry.

### 9.3.3 Technical Efficiency in the Kenyan Garment Industry

The econometric results based on the stochastic production function show that garment production in Kenya is done under constant returns to scale. In the production function, capital and labour were found to be statistically significant in explaining output. The study further found that elasticity of labour was higher than that of capital, perhaps an indication of the labour-intensity of the garment industry.

Most of the garment producers are technically efficient with a mean technical efficiency scores of 83.1 per cent. The mean technical efficiency levels are higher, but compares to those obtained in other studies in African countries whose mean ranged from 40 per cent to 81 per cent (Chapelle and Plane, 2005; Bigsten *et al.* 2004; Ngui, 2008). One of the possible reasons for our results is that the study sample constituted only medium and large firms with a higher probability of being more technically efficient. Previous studies have included micro and small scale firms with low technical efficiency. Another reason is that most of the firms in the study sample may have improved significantly in terms of efficiency after surviving different waves of liberalization.

The analyses of the technical efficiency, firm-size and export variables were found to be statistically significant, and both had the expected signs. Unfortunately, other variables such as firm-age, spillover, capacity utilisation and sunk costs were not significant in explaining technical efficiency and their inclusion affected the overall performance of the model. They were therefore omitted in the final estimation of the study's preferred model. This could be as a result of the study's small sample of 44 firms. Based on maximum likelihood estimation, the study indicates significant efficiency gains from exporting, which can be interpreted as learning by exporting. Similarly, consistent with Jovanovich (1982), firm-size significantly explains technical efficiency in the garment industry. As firms grow in the context of limited domestic market demand, they may find exporting as the next possible option. To penetrate these markets, they have to improve their efficiency as a way of creating leverage. There is need to develop industrial and trade policies that support not only the 'large-scale' export-oriented firms, but also the 'local' segment of the industry. Firms participating in multiple value chains have shown impressive signs for upgrading and, therefore, may benefit more from such efforts.

In summary, this study's findings seem to suggest that firms that operate mainly in GVCs experience process and product upgrading and that none of the firms in this chain has managed to upgrade functionally. The inclusion of separate value chains for the European market that is quite distinct in terms of governance, from the US value chain and the regional African markets, which constitutes both findings and contribution of this dissertation. This analysis makes it clear that firms have markedly different modes of operation based the final market that they serve. The European market value chain has been shown to depict a unique governance structure and has unique potential for upgrading. Moreover, the inclusion of regional value chains helps to uncover the diversity of upgrading experiences across value chains available to firms in developing countries. More importantly, firms that operate in more than one value chain simultaneously seem to experience higher opportunities for upgrading compared to those that operate in a single chain. This finding is consistent with Bazan and Navas-Alemán (2004), Tewari (2006), Navas-Alemán (2006) and Kishimoto (2004) who contend that multi-chain producers with a strong presence in the domestic market showed the best attainment in all types of upgrading: process, product and functional upgrading. It is worth noting that these findings are based on a small developing economy (Kenya) unlike other previous studies which were based on large developing economies. This notwithstanding, the findings seem to converge. According to Clercq *et al.* (2005), there might be synergy created by confidence of operating in more familiar environments, which boosts firms' internationalisation process. The study therefore argues, that based on these findings, garment firms in Kenya may use design and production skills acquired in one value chain to improve their products in a different market.

#### **9.4 Research Achievements**

One of the most widely held propositions in the value chain discourse is that rapid build-up of industrial production capabilities in developing countries occurs when local enterprises are linked with global buyers. In other words, upgrading potentials for local firms is structured by the relationships (governance structure) in GVC. Moreover, technical efficiency, a close constituent of process upgrading, is driven by insertion in GVC. However, emerging thinking shows that upgrading can occur in other chains as well (Bazan and Navas-Alemán, 2004; Schmitz, 2006). This study aimed at examining upgrading potentials in the Kenyan garment industry. In the course of this study, several achievements were made as outlined below.

This work has outlined the four value chains applicable to the Kenyan garment industry based on market destinations: the US, the European, African regional and domestic value chains. These chains were mapped by looking at how the flow of goods and information is structured. For each chain, a detailed analysis of governance structure was conducted, against which three major types of upgrading – process, product, and functional – were examined. The inclusion of the European and regional value chains in the analysis constitutes one of the major achievements of this study. This analysis indeed helped to uncover the diversity of upgrading experiences across value chains available to garment firms in developing countries.

The study also documents governance structures of different value chains with a view to demonstrating that the nature of chain governance affects prospects for upgrading for garment firms in developing countries. Four types of governance structures were presented and discussed – ‘hierarchy’, ‘quasi-hierarchy’, ‘balanced network’ and ‘market-based’ (Gibbon and Ponte, 2005; McCormick and Schmitz, 2002; Humphrey and Schmitz, 2000). The findings indicate that the US chain was characterised by quasi-hierarchical nature of governance, which limited functional upgrading. This type of governance appears to support upgrading within the area of production (process and product upgrading). The European value chain depicted characteristics of balanced networks.

The network chain governance provides a good environment in which local producers can learn from foreign firms, and from their markets without falling into situations where one firm (mainly lead firms) exerts dominance over the other (Navas-Alemán, 2006). Through partnerships, firms in this chain were involved in the design and branding of their products, which was not the case in quasi-hierarchical value chains. Ultimately, network governance appears to promote the best attainment in all types of upgrading: process, product and functional upgrading. The regional and domestic value chains governed by market relationships demonstrate how capabilities of local producers can be harnessed through participation in national and regional markets. If well nurtured, unsophisticated national and regional value chains in which local firms market their brands may offer a first rung towards functional upgrading. Bazan and Navas-Alemán (2006) have shown that as long as such markets are characterised by market-based relationships, they offer an appropriate learning ground for local firms to develop their own brands and marketing strategies, particularly those in small developing countries. In the end, firms inserted in such

value chains may upgrade functionally, which is not easy within the quasi-hierarchical value chains.

Another crucial finding of this thesis is the recognition and analysis of multi-chain producers with presence in export as well as in domestic markets. The performance of these firms was consistently higher than the domestic-only and export-only producers. Moreover, these firms demonstrated higher attainment in all types of industrial upgrading. In particular, firms in multiple chains were using the knowledge acquired in the domestic market to venture into the export markets. This is consistent with the internationalisation paradigm, where it has been argued that as firms expand in the context of limited domestic market, internationalisation becomes increasingly necessary (Clercq *et al.* 2005; Morrison *et al.* 2008). Firms use the knowledge acquired at home markets, however rudimentary, to expand their knowledge base, and eventually get leverage in their cross-border activities.

One can therefore argue that as firms increasingly learn about capabilities for competency in the domestic market, the uncertainty embedded in internationalisation decreases. Overall, the production performance indicators showed that multi-chain producers fared better than other firms. The study also found that firms in this category 'self-select' to enter the export markets governed by quasi-hierarchical relationships that would jeopardise their independence. Instead they opt for different markets where relationships are network-based and where possibilities for mastering all types of upgrading through interaction with supportive buyers are higher. These results might indicate that following a multi-chain strategy is perhaps the best route for garment producers located in developing countries to upgrade their activities. More importantly, this work suggests that participation in multiple chains characterised by market or network relationship offers superior opportunities for one particular type of upgrading, which is crucial for developing country firms: functional upgrading.

Finally, this study also estimates technical efficiency of Kenyan garment manufacturing firms per se, which has not been undertaken before. As shown in chapter three, existing studies on technical efficiency are based on several industries, one of which is the textile and clothing industry (Ngui, 2008; Bigsten *et al.* 2004; Lundvall *et al.* 2002; Kimuyu, 1999). Due to heterogeneity of these sectors, it may not be possible to demystify individual sectoral issues. The contribution of this thesis lies in making this literature more robust by analysing technical

efficiency scores as well as the determinants of technical efficiency in the garment industry using the stochastic frontier model. Consistent with other studies in this area, exporting and firm-sizes were found to be significant in explaining technical efficiency in the industry. These findings are consistent with 'learning-by-exporting' and therefore reinforce the relevance of the export-oriented industrialisation strategy.<sup>88</sup> However, encouraging an export-led industrialisation strategy without nurturing the accumulation of learning in the domestic market that would allow for local capabilities to develop is in many cases not promising for developing countries (Tewari, 2006; Navas-Alemán, 2006). In any case, technical efficiency scores for firms in multi-chains are higher than for those in export-only or domestic-only value chains. It is for these reasons that this thesis advocates for participation in multiple value chains. It is important to recognise the fact that there is also a feedback effects from exporting to technical efficiency, such that firms that are efficient self select to export.

## 9.5 Limitations of the Study

Although fieldwork data indicate a strong degree of support for both broad and specific hypotheses, it is important to recognise a number of the limitations that should be considered when interpreting the findings of this study. They include methodological constraints, phenomenon under investigation and the kind of data used.

On methodological constraints, it was our wish at the proposal stage to gather information from all medium- and large-scale garment firms in Kenya. This was not possible due to time and resource constraints. The problem was further exacerbated by some firms declining to participate in the survey. This being an academic exercise with time limitation, data collection exercise had to stop at some point to allow the process of report writing. At the beginning of the survey, respondents were apprehensive about disclosing some information especially on financial matters for fear that this may research tax agents or their competitors. However, re-visits to the firms helped in creating rapport and we were able to get reliable but at times very subjective financial data.

---

<sup>88</sup> Schmitz (2006) argued that question of upgrading in GVC, which is central in the analysis, cannot be answered by drawing on global trade statistics. Trade statistics inform us about the quantity and direction of trade but not about the way the trade is organized.

There was evidence of research fatigue among the firms, due to numerous surveys that have been done recently. The industry is shrinking, while more and more interviews are being conducted. This has meant that most of the firms are visited by researchers often and were feeling fatigued by research. Some respondents complained that every year they participated in more than three surveys yet they did not see any positive results emanating from the research reports. A vast majority of respondents were discontented with the efforts by the Kenyan government in improving the business environment. This made them somewhat reluctant to participate in any type of research.

Another limitation was with the research design. It would have been preferred if the whole study was ethnographic to allow for long term investigation and immersion in the field. But due to time and resource constraints, this was not possible. In addition, reliance on reporting by the respondent was inevitable in this study given the variation of data that was gathered. There might have been systematic bias, most obviously from *ex post* rationalism by respondents. The use of triangulation and making several visits to firms were however adopted to mitigate this limitation.

In carrying out a thorough value chain analysis, scholars have suggested that it is critical to conduct in-depth interviews with buyers and producers regarding their roles in the respective value chain. In our case, this would have entailed interviewing local, regional and global buyers. Regrettably, this was not possible particularly with global buyers who mainly depended on intermediaries. Although we were able to interview a few representatives of global buyers, the representation was not adequate. Therefore, our analysis of buyers' perception may be limited and should be interpreted with caution.

Another limitation is associated with correct measurement of variables such as output particularly for those firms where records were not adequately kept. The measurement of output variables was based on respondents' recall ability. Even where firms had records and indicated that they were audited, by virtue of being private companies, they were under no obligation to reveal such information to us. We therefore suspect bias in the measurement of output which may have been overstated by some respondents particularly those who did not allow us to counter-check with their books of accounts. Some of the respondents were unwilling to reveal financial figures for fear of this information reaching competitors or tax authorities.

Further limitation relates to the number of firms in our survey which by previous studies in the manufacturing sector standard could be classified as somewhat small. This may have affected the degrees of freedom in our estimation. In spite of these limitations, we are confident that the quality of data collected is sufficient enough to provide adequate analysis for hypotheses testing.

Finally, although the study of a single industry has an advantage of controlling extraneous factors, it also raises the question of whether the findings can be generalised to the wider manufacturing sector. The garment industry, which is the focus of this study, has its unique characteristics, which distinguish it from other industries in the Kenyan manufacturing sector. Therefore, the findings of this study may not be generalised beyond the garment industry. In spite of this limitation, the results presented in this thesis are credible and adequately help in understanding the research problem as stated in Chapter One.

## **9.6 Policy Recommendations**

This study places the development of the garment industry at the heart of Kenya's industrialisation agenda due to its enormous contribution toward the development process. One of the major findings of this study is that the future of the Kenyan garment industry lies with locally-owned firms that have capabilities to venture and diversify their export markets. The evidence presented in this thesis shows that exporting *per se* propelled by FDIs such as EPZ, has limited capabilities for developing the necessary conditions for industrial functional upgrading. In any case, FDIs in the Kenyan garment industry have been shown to be market-seeking and therefore have a limited scope in deepening of backward integration with the rest of the economy (Phelps *et al.* 2009). Beyond creating employment, the indirect economic development effects have been limited, particularly on technological and managerial capacity. There are several policy issues emerging from the results of this study.

### **9.6.1 Promote Participation of Locally-owned Firms in the Export Markets**

First, there are significant gains in exporting by local firms. Policies that enable firms to participate in export market should therefore be encouraged. Firms should make an effort to penetrate export markets governed by network and market-based relationships as opposed to

those value chains governed by hierarchical relationships. In so doing, garment firms should seek partnerships and engage in joint ventures with foreign firms, which are more or less of similar size and which complement their competences. Firms should also avoid being the manufacturing partner in the relationship without contributing in the design, marketing and branding of garment products. The model of industrial upgrading should be one where local producers remain independent, but at the same time diversify into various value chains of all types of upgrading. This approach is likely to offer alternative trajectories of upgrading and global integration that do not entirely depend on insertion into GVCs. Towards this, local firms should intensify their efforts to export to the US markets where they are likely to experience process and product upgrading. However, they should try to do this without abandoning other markets. Evidence has shown that firms in multiple markets demonstrate better prospects for upgrading than those in single-chains.

The recently introduced Export Business Incubation Programme, an initiative of the Export Processing Zones Authority (EPZA), to nurture small and medium scale manufacturing exporters into large exporting enterprises should be strengthened. The programme aims at accelerating the growth of export-oriented businesses by selecting small enterprises to participate from EPZ tax incentives, new purpose-built infrastructure located in Athi River EPZ, and business development support services available under this programme.

With respect to firm size, there is a positive relationship between size and technical efficiency. There is therefore need to support programmes geared towards stimulating the growth in size of firms in the industry. This should be coupled with upgrading of human skills through training to circumvent the shortage of technical skills in the industry.

### **9.6.2 Enhance Preferential Market Access such as AGOA**

In the meantime, besides promoting local firms to export, there is need to support efforts by Kenyan firms exporting to the US market which at the moment is the largest export market. The success of the Kenyan clothing sector in the short run depends on its preferential access to the US market. Whilst WTO regulations rule out quota restrictions, the degree of tariff protection which is conferred by AGOA, coupled with the ability to import fabrics from East Asia, has been very significant, with effective rates of protection ranging between 25 and 85 percent. Without

this preferential market access, which is due to expire in 2015, the Kenyan clothing industry would not survive.

But even if Kenya continues to benefit from preferential access to the US economy, the industry as currently constituted will still fail unless the access to the derogation on the rules of entry beyond September 2012 when this is due to expire. There seems to be no significant steps to deepen the textile industry. It is recognised that the development of a cost-effective and competitive textile industry takes time and, moreover, is unlikely to result from the simple interplay of market forces. Given the long gestation period in capital-intensive textile investments, it is inconceivable that Kenya will be able to meet the rules of entry when the fabric derogation expires in 2012. It will need to be extended and this will require a coordinated and intensive lobbying process, by the Kenyan government, in partnership with other SSA governments.

### **9.6.3 Lobby for Extension of the AGOA Derogation of Rules of Origin**

There is need to strengthen lobbying strategies for market access to the US market. In this regard, the government and private sector should team up to negotiate extension of AGOA beyond 2015 (when AGOA is bound to end) so as to allow growth of the textile and clothing industry in Kenya. In 2005, Kenya led other SSA countries –Madagascar, Mauritius and South Africa in establishing the African Clothing and Textiles Industry Federation (ACTIF) which negotiated successfully with the US for an extension of the AGOA 3<sup>rd</sup> country rule of origin provision from September 2007 to September 2012 ([www.actifafrica.com](http://www.actifafrica.com)). Although ACTIF intention was to have this extended until end of AGOA (that is, 2015), the 5 year extension no doubts is longer than the other two previous extensions. ACTIF has commenced a new wave of negotiation that hopes to have this extension beyond 2012 so as to sustain the largely FDI segment of the clothing in SSA. One of the arguments which ACTIF has been pursuing has been the issue of risk reduction in global sourcing. It argues that buyers need an alternative to sourcing only from the Chinese (and South East Asia) region. It is pushing for special consideration to be given to SSA for both geopolitical and a poverty-reducing reasons. As policy, there is need for SSA governments to support efforts by ACTIF and let it not to be seen as purely private-sector driven agenda.

#### **9.6.4 Develop the Textile Sector**

The increasing reliance on imported raw materials for garment production poses a threat to sustainable participation by Kenya in GVCs, particularly when the AGOA rules of origin come into effect in 2012. This will further expose Kenyan producers to the already stiff competition in the global market from well integrated producers such as China and India. As the negotiations on extension of rules of origin progresses, it is necessary to simultaneously develop programmes for the revival of the textile sector. This can be achieved through sustained policy support, external financing of the industry and incentives to attract FDI in the textile industry. In spite of this realisation, commitment to revitalise the textile industry appears to be lethargic. Perhaps a more viable approach would be for African countries to support a regional based textile industry which can serve all countries with prerequisite raw materials. South Africa with its relatively developed industrial sector could take leadership in developing textile industry. Another approach would be for Kenya to forge alliances with neighbouring countries: Tanzania and Uganda who can produce lint and fabric more competitively than Kenya, and then Kenya concentrates on garment manufacturing.

#### **9.6.5 Export Market Diversification**

There is need to promote export of Kenyan made garments to markets beyond the US. Given that the survival of the garment industry during the post MFA period is dependent on preferential trade access such as AGOA (Morris 2006; McCormick *et al.* 2006) the study recommends that the government should act proactively by negotiating with other developed countries for preferential market access. This will not only give Kenyan firms some level of competitive advantage, but it will also avail the much-needed alternative markets. For example, Kenya can negotiate with Canada to be included in the Market Access Initiative for Less Developed Countries (LDC-MAI). This will control the relocation of garment firms from Kenya to the neighbouring and other African countries. There is need to speed up negotiations between Kenya and the EU under EPA and ensure that textile and clothing are given special preference to the EU market. However, the rigid rules of origin under the EPA should be reconsidered in the ACP-EU trade negotiations.

The African regional market offers significant market opportunities for Kenyan garment products. There is therefore a need for the Kenya government to play a leading role in the regional trade agreements such as COMESA and EAC to include manufactured exports such as garments, which have competitive advantage compared to other countries in the regional blocks. The approach for penetrating these markets should be based on harnessing local skills to move to design-intensive export niches as a way of getting out of direct competition with volume based exporters.

Garment firms in Kenya should be encouraged to increase their efforts to penetrate neighbouring export markets as a way of building their capabilities into the global markets. These efforts should be supported, as long as the chain governance is market based, for their ventures into functional upgrading. In this regard, firms should be ready to undertake a continuous search for opportunities, especially opportunities that do not pertain to the firm's current activities as this will enable them to upgrade. Firms have to continuously invest in the upgrading of production technology and marketing strategies to facilitate their prospects for upgrading. Humphrey and Schmitz (2004:356) stress that upgrading "requires continuous investment by the local firms themselves in people, organisation and equipments", probably a reference to the crucial role of technological capabilities. Along the same lines, Kishimoto (2004) pointed out the importance of pre-existing capabilities in sustaining functional upgrading in the Taiwanese computer industry. He observed: "Taiwanese producers already possessed basic production skills and some design capabilities". He added that "holding enough technological capability is a necessary condition for getting orders" (Kishimoto, 2004:247). Participation in multiple chains has been shown to provide impetus for process and product upgrading, even within the hierarchical value chains as long as local firms avoid becoming overly dependent on lead actors.

#### **9.6.6 Control of Clothes Importation and Promote Domestic Demand**

One of the main obstacles facing domestic garment producers is fierce competition. The competition in the domestic market is twofold: the influx of cheap new Chinese and second-hand clothes. Along with the rise of trade in new clothing is the related phenomenon of surging trade in second-hand clothes. Originating from affluent countries, the sheer magnitude of clothes donations, combined with the new openness of developing country markets brought about by

SAPs, has fuelled a new global industry consisting of exporters in developed countries feeding layers of wholesale and retail traders in developing countries (McCormick *et al.* 2007).

Second-hand garments attract considerable consumer interest because of their low price, variety, and what many believe to be their higher quality (McCormick *et al.* 1997; Field, 2000). On average, second-hand garments retail at between 10 and 30 per cent in terms of price compared to new garments. Kenya with its small domestic market, which is characterised by low income consumers, has a populace that increasingly depend on second-hand clothing. As a result, second-hand clothing has become a major competitor to new clothing in Kenya, where low incomes often mean that new clothing is out of reach for the majority of the consumers. It has been suggested in some quarters that second-hand clothing should be banned. But from a consumer point of view, this is untenable as it is an important source of a basic human need – clothing. While this issue needs to be addressed, the high prices of new clothing, occasioned by high production costs and inefficiency in garment manufacturing is an issue of concern. The ideal situation would be whereby the poor can afford to buy decent new clothing.

The explosion in imports of new clothes that followed market liberalisation has also been blamed for the drop in demand for locally produced garments. These garments compete directly with locally manufactured clothes as they target the small middle income group. This has particularly hit urban areas where ‘exhibitions’ centres are mushrooming by the day. Items brought into the country from China, India, UAE, and elsewhere threaten local manufacturers (Kinyanjui *et al.* 2004). Producers complain that the government treats locally manufactured garments unfairly, making it very difficult for them to compete. It is alleged that many imports, for instance, enter the market without paying statutory duty. In addition, KEBS applies strict standards on local garments, but appears to ignore imports, most of which fail to comply with labelling or quality standards (Kinyanjui *et al.* 2004; McCormick *et al.* 2001). There is therefore an urgent need to ensure that competition in the domestic market is fair to all players. Besides controlling the importation of new clothes, the government has a moral obligation to ensure that statutory duties for such goods are paid and that these goods meet set quality standards. There is also a need to ensure that illegal entry of such goods is curbed. The customs department of the Kenya Revenue Authority needs to be more alert on such importation and punitive measures should be taken against the culprits.

Another approach to increase demand in the domestic market would be to encourage large-scale consumers such as the military, security forces, and state corporations to buy their uniforms from local manufacturers instead of importing them. This can be done by introducing incentives for domestic sourcing. On their part, firms should harness their production capabilities in such a way that large-scale consumers get value for their money. Production and firm inefficiencies should not be passed on to local consumers.

### **9.6.7 Shift from Woven to Knit Garments**

At the moment, most of the garment exports from Kenya are clustered in the woven category, which, with exception to jeans, have generally low global prices. Apparently, China and other well developed producers have a competitive edge in the woven. It might be helpful for Kenyan firms to strengthen their capabilities in knit garments, particularly to the high-end niche markets. Madagascar's recent surge in the global garment market is attributed to a shift from conventional woven products to high end knit products targeting the EU market. Kenya could borrow a leaf from this experience. In one of the case studies, a respondent whose firm produces organic cotton knit garments reported that there is a high demand for such products in the European market.

The nature of AGOA tariff preferences – as presently constituted – and the derogation on rules of origin provide particular incentives to products using synthetic fibres. This is because of the higher duties which these products attract in the US and their share of total product costs (hence enhancing the rate of effective protection). To the extent that these two characteristics of the trade regime are sustained, opportunities provided by the production of synthetics are substantial. In general, this requires a medium-term perspective, since switching product lines can take time. From our interviews it did not emerge like firms were ready to adapt to these new potential being offered by AGOA.

### **9.6.8 Infrastructural Support for Export Promotion**

Export competitiveness of the Kenyan industry in the global market is pegged on the ability to supply efficiently in the global market. A major impediment towards this is the supply

constraints associated with lack of adequate infrastructure. This includes not just physical infrastructure such as roads, water and power, but also bureaucratic infrastructure such as port clearance, enterprise set-up and the delivery of appropriate certification. Most firms were sceptical about government support in facilitating necessary infrastructure. The state has a duty to address supply constraints, which increase cost of production in Kenya – such as infrastructural, labour and public service delivery. More importantly, there is need to promote dialogue among all stakeholders to discuss and suggest key approaches for revitalising this industry. The public-private partnership among stakeholders in the textile and clothing sectors needs to be hastened. This can be spearheaded by organisations such as the Kenyan Association of Manufacturers (KAM), African Cotton and Textiles Industries Federation (ACTIF) and the Kenya Private Sector Alliance (KEPSA). One of the primary competitive benefits of Chinese industry is the efficiency with which the infrastructure functions and Kenya needs to learn more from such success.

## **9.7 Areas for Further Research**

This study empirically investigates the role of participation in value chains on upgrading and technical efficiency in the Kenyan garment industry. The findings of this study unveil several unclear areas, which call for further research. First, the data utilized in this study was cross-sectional and was gathered from 44 firms. This does not capture the dynamic issues of upgrading and technical efficiency. There is therefore a need to undertake further research based on panel data covering the pre and post MFA termination.

Second, the sample size of 44 firms used in the estimation of technical efficiency is relatively small compared to the sample used in other studies on technical efficiency. Although this study focused on medium and large scale firms (hence the small sample size), further research should expand the sample by including small-scale garment firms. This would certainly increase the sample size and hence the precision of efficiency estimations. Thirdly, further research that compares upgrading and technical efficiency in several countries needs to be undertaken to confirm whether the results obtained in this study can be replicated in other countries.

Finally, the field research for this study was conducted in 2006, just one year after the termination of MFA. This period may have been too short to allow the capturing of the impacts

of MFA on the industry due to the time lag. Moreover, Adhikari and Yamamoto (2007) argue that the full impact of the MFA termination may not have been fully felt due to the safeguard measures negotiated by leading garment importers – the US and the EU. These measures expired in 2008, and therefore studies based on data relating to recent periods may bring out new findings.

## REFERENCES

- Akerberg, Daniel A., Kevin Caves and Garth Frazer, 2005. 'Structural Identification of Production Functions', Mimeographed, Economics Department, University of California, Los Angeles.
- Adhikari Ratnakar and Chartrini Weeratunge. 2007. 'Textiles and Clothing in South Asia: Current Status and Future Potential'. *South Asia Economic Journal*. 8:2 p. 171 – 203
- Adhikari, Ratnakar and Yumiko Yamamoto, 2007. 'Textile and Clothing Industry: Adjusting to the Post-Quota World'. In Montes F. Manuel (ed). *Industrial Development for the 21<sup>st</sup> Century: Sustainable Development Perspectives*. New York: United Nations.
- Aguilar, Renato and Arne Bigsten. 2002. 'The Regional Programme of Enterprise Development Survey, 1993-1995', in Arne Bigsten and Peter Kimuyu (eds.) *Structure and Performance of Manufacturing in Kenya*, London: Palgrave Publishers.
- Aigner, D.J., C. A. K Lovell and P. Schmidt, 1977. Formulation and Estimation of Stochastic Frontier Production Function Models. *Journal of Econometrics*, 6, p. 21-37.
- Ajibefun Igbekele A. and Adebiye G. Daramola, 2003. Efficiency of Microenterprises in the Nigerian Economy, *AERC Research Paper 134*, Nairobi: African Economic Research Consortium.
- Andenukinju, Adeola F. and Louis N. Chete, 2002. 'Productivity, Market Structure and Trade Liberalization in Nigeria'. AERC Research Paper Number 122, Nairobi: African Economic Research Consortium
- Appelbaum, Richard P. 2005. TNCs and the Removal of Textiles and Clothing Quotas, *Series of Current Studies on FDI and Development*, Geneva: UNCTAD.
- Appelbaum, Richard P. and Gary Gereffi, 1994. 'Power and Profits in the Apparel Commodity Chain' in Bonacich, Edna, Lucie Cheng, Norma Chinchilla, Nora Hamilton and Paul Ong (Eds.) *Global Production: The Apparel in the Pacific Rim*, Philadelphia: Temple University Press, Chapter 3 p. 42.
- Audet, Denis. 2007. 'Smooth as Silk? A First Look at the Post MFA Textiles and Clothing Landscape'. *Journal of International Economic Law*, 10:2, p. 267-284.
- Aw, B. Y., S. Chung and M. J. Roberts. 2000. Productivity and Turnover in Export Market: Micro-level Evidence from the Republic of Korea and Taiwan (China), *World Bank Economic Review*, 14:1 p. 65-90.
- Aw, Bee Yan, and A. R. Hwang. 1995. Productivity and the Export Market: A Firm-level Analysis, *Journal of Development Economics*, 47:2, p. 313-332.
- Bagchi, Sanjoy. 2001. *International Trade Policy in Textiles: Fifty Years of Protection*. Geneva: International Textiles and Clothing Bureau.
- Bair, Jennifer and Gary Gereffi. 2001. "Local Clusters in Global Chains: The Causes and Consequences of Export Dynamism in Torreon's Blue Jeans Industry." *World Development*, 29:11, p. 1885-1903.
- Bair, Jennifer. 2005. "Global Capitalism and Commodity Chains: Looking Back, Going Forward." *Competition and Change*, 9:2, p. 153-180.
- Balcombe, Kelvin, Iain Fraser and Jae H. Kim, 2006. 'Estimating Technical Efficiency of Australian Dairy Farms Using Alternative Frontier Methodologies', *Applied Economics*, 38:1, p. 2221-2236.
- Battese, George E., and G. S. Corra, 1977. 'Estimation of a Production Frontier Model: with Application to the Pastoral Zone of Eastern Australia', *Journal of Agricultural Economics*, 21:3, p. 169-179.

- Battese, George E. and Tim J. Coelli. 1993. 'A Stochastic Frontier Production Function Incorporating A Model for Technical Inefficiency Effects', *Working Papers in Econometrics and Applied Statistics Number 69*, Department of Econometrics, Armidale: University of New England.
- Battese, George E. and Sumiter S. Broca, 1997. 'Functional Forms of Stochastic Frontier Production Functions and Models for Technical Inefficiency Effects: A Comparative Study for Wheat Farmers in Pakistan', *Journal of Productivity Analysis* 8, p. 395- 414.
- Battese, George E., and Tim Coelli, 1995. A Model of Technical Inefficiency Effects in a Stochastic Frontier Production Function for Panel Data, *Empirical Economics*, 20, p. 325 – 332.
- Bazan, Luiza, and Lizbeth Navas-Alemán. 2004. 'The Underground Revolution in the Sinos Valley: A Comparison of Upgrading in Global and National Value Chains,' In Schmitz, Hubert (ed.) *Local Enterprises in the Global Economy: Issues of Governance and Upgrading*, Cheltenham: Edward Elgar. p. 110-139.
- Berg, Bruce L. 1998. *Qualitative Research Methods for the Social Sciences*. Boston: Allyn and Bacon.
- Berndt, E.R. and Laurits R. Christensen, 1973. 'The Translog Function and the Substitution of Equipment, Structures and Labour in U.S. Manufacturing 1929-68, *Journal of Econometrics*, 1, p. 81-114.
- Berry, R. Albert. 1992. 'Firm Size in the Analysis of Trade and Development', in G. K. Helleiner (ed.) *Trade policy, Industrialisation and Development: New Perspectives*, London: Oxford University Press.
- Biggs, Tyler, G. R. Moody, J. H. van Leeuwen, E. D. White. 1994. 'Africa Can Compete! Export Opportunities and Challenges for Garments and Home Products in the European market', *World Bank Discussion Paper 300*, Washington DC: World Bank,.
- Biggs, Tyler, M. Miller, C. Otto, and G. Tyler. 1996. 'Africa Can Compete! Export Opportunities and Challenges for Garments and Home Products in the U.S. Market', *World Bank Discussion Paper 242*, Washington DC: World Bank
- Bigsten, Arne, Peter Kimuyu and Karl Lundvall, 2004. 'What to Do with the Informal Sector?' *Development Policy Review*, 22:6, p. 701-715.
- Bigsten, Arne, Måns Söderbom and Anthony Wambugu, 2003. *Firm Age and Earnings in Kenyan Manufacturing*, CSAE Working Paper WPS/2003-08, Oxford, CSAE, Department of Economics, University of Oxford.
- Bigsten Arne and Peter Kimuyu (eds.) 2002. *Structure and Performance of Manufacturing in Kenya*, London: Palgrave Publishers.
- Bigsten Arne. 2002. 'History and Policy of Manufacturing in Kenya', in Bigsten, Arne and Peter Kimuyu, (eds.) *Structure and Performance of Manufacturing in Kenya*, London: Palgrave Publishers.
- Bigsten, Arne, Paul Collier, Stefan Dercon, Marcel Fafchamps, Bernard Gauthier, Jan Willem Gunning, Abena Oduro, Catherine Pattillo, Måns Söderbom, Francis Teal, Albert Zeufack, and Remco Oostendorp 2000. *Exports and Firm-level Efficiency in African Manufacturing*, CSAE Working Paper Series 2000:16, Centre for the Study of African Economies, University of Oxford, London.
- Bigsten, Arne, Paul Collier, Stefan Dercon, Marcel Fafchamps, Bernard Gauthier, Jan Willem Gunning, Abena Oduro, Catherine Pattillo, Måns Söderbom, Francis Teal, Albert Zeufack, and Remco Oostendorp 1999. Exports of African Manufactures: Macro Policy and Firm Behaviour, *Journal of International Trade and Economic Development*, 8:1, p. 53-71.
- Bigsten, Arne, Paul Collier, Stefan Dercon, Marcel Fafchamps, Bernard Gauthier, Jan Willem Gunning, Jean Habarurema, Abena Oduro, Remco Oostendorp, Catherine Pattillo, Måns Söderbom, Francis Teal and Albert Zeufack, 2000. *Exports and Firm-level Efficiency in African Manufacturing*, CSAE Working Paper Series 2000:16, London: Centre for the Study of African Economies, University of Oxford.

- Bigsten, Arne, Paul Collier, Stefan Dercon, Marcel Fafchamps, Bernard Gauthier, Jan Willem Gunning, Abena Uduro, Remco Oostendorp, Catherine Patillo, Måns Söderbom, Francis Teal and Albert Zeufack, 2004. 'Do African Manufacturing Firms Learn from Exporting?', *Journal of Development Studies*, 40:3, p. 115 – 141.
- Bigsten, Arne. 2002. 'History and Policy on Manufacturing in Kenya', in Bigsten Arne and Peter Kimuyu (eds.) *Structure and Performance of Manufacturing in Kenya*, London: Palgrave Publishers.
- Bini, Alessandra, 2004. 'Upgrading in the Leather Value Chain: The Learning Experience of Ethiopian Tanneries.' in McCormick Dorothy and Christian M. Rogerson (eds.) *Clothing and Footwear in African Industrialization*, Pretoria: Africa Institute of South Africa.
- Brenton, Paul and Mombert Hoppe. 2007. *Clothing and Export Diversification Still a Route to Growth for Low-Income Countries?* Policy Research Working Paper, 4343. Washington D.C: World Bank.
- Brümmer B. 2001. 'Stochastic Frontier Analysis Using SFAMB for Ox'. Department of Agricultural Economics, Christian-Albrechts-University of Kiel, Kiel.
- Caudill, Steven B., Jon M. Ford, Daniel M. Gropper. 1995. 'Frontier Estimation and Firm Specific Inefficiency Measures in the Presence of Heteroscedasticity.' *Journal of Business and Economic Statistics*, 13:1, p. 105-111.
- Chapelle, Karine, and Patrick Plane, 2005. 'Technical Efficiency Measurement Within the Manufacturing Sector in Cote d'Ivoire: A stochastic Frontier Approach' *The Journal of Development Studies*, 41:7, p.1303-1324.
- Caves, Douglass W., Laurits R. Christensen and W. E. Diewert. 1982. 'The Economic Theory of Index Numbers and the Measurement of Input, Output and Productivity,' *Econometrica* 50:6, p. 1393-1414
- Central Bureau of Statistics, International Centre for Economic Growth and K-REP Holdings Ltd, 1999. *National Micro and Small Enterprise Baseline Survey 1999*. Nairobi: CBS, ICEG & K-REP.
- Chen T. and D. Tang. 1987. Comparing Technical Efficiency Between Import Substitution and Export-Oriented Firms in a Developing Country, *Journal of Development Economics*, 26:2 p. 277-289.
- Chiang, A. C. 1984. 'Fundamental Methods of Mathematical Economics'. Singapore: McGraw-Hill.
- Chirwa, Ephraim W. 2001. Privatization and Technical Efficiency: Evidence from the Manufacturing Sector in Malawi, *African Development Review*, 13:2, p. 276-307.
- Chirwa, Ephraim W. 2007. "Sources of Technical Efficiency among Small Holder Maize Farmers in Southern Malawi," *AERC Research Paper 172*, Nairobi: African Economic Research Consortium.
- Clercq, Dirk De, Harry J. Sapienza and Hans Crijns, 2005. "The Internationalization of Small and Medium-Sized Firms." *Small Business Economics*, 24:1. p. 409-419.
- Clerides, S. K., S. Lach, and J. R. Tybout. 1998. 'Is Learning by Exporting Important? Micro-Dynamic Evidence from Colombia, Mexico, and Morocco', *Quarterly Journal of Economics*, 113:3. p. 903-48.
- Coase, R. H. 1992. "The Institutional Structure of Production", *American Economic Review*, Vol.82, p. 713-19.
- Coelli, Tim J., 1995. Estimators and Hypothesis Tests for a Stochastic Frontier Function: A Monte Carlo Analysis, *Journal of Productivity Analysis*, 6. p. 247-268.
- Coelli, Tim J., Prasada D. S. Rao and George E. Battese, 2005. *An Introduction to Efficiency and Productivity Analysis*, New York: Springer.
- Coelli, Tim J., Prasada D. S. Rao, Charles J. O'Donnell and George E. Battese. 1998. *An Introduction to Efficiency and Productivity Analysis*, London: Kluwer Academic Publishers.

- Coelli, Tim J., 1996. A Guide to FRONTIER Version 4.1: A Computer Programme for Stochastic Frontier Production and Cost Function Estimation, Centre for Efficiency and productivity Analysis, *CEPA Working Paper 96/07*, University of New England, Armidale, Australia.
- Coelli, Tim J., A. Estache, S. Perelman, and L. Trujillo (2003) *A Premier on Efficiency Measurement for Utilities and Transport Regulators*. Washington DC: The World Bank.
- Creswell, John W. 2003, *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*, Sage Publications Ltd, Thousand Oaks.
- Dawson, Catherine, 2002. *Practical Research Methods*, Oxford: How to Books Publishers Ltd.
- Dickerson, Kitty G. 1999. *Textiles and Apparel in the Global Economy*. Upper Saddle River, NJ: Prentice-Hall.
- Dolan, Catherine S. and Meenu Tewari, 2001. 'From What We Wear to What We Eat: Upgrading in Global Value Chains', *IDS Bulletin* 32:3, p. 94-104.
- Dolan, Catherine and John Humphrey, 2000. "Governance and Trade in Fresh Vegetables: the Impact of UK Supermarkets on the African Horticulture Industry." *Journal of Development Studies*, 32:3: p. 147-76.
- EPZA, 2008. *EPZA Annual Report for the Year 2007*. Nairobi: Export Processing Zones Authority
- Farrell, M. J. 1957. 'The Measurement of Productive Efficiency', *Journal of Royal Statistical Society, Series A* 120, p. 253 – 281.
- Farrell, M. J. and M. Fieldhouse. 1962. 'Estimating Efficient Production Functions under Increasing Returns to Scale', *Journal of Royal Statistical Society, Series A* 125, p. 252-267.
- Ferrand, David Vaughan. 1998. *Discontinuity in Development: Kenya's Middle-Scale Manufacturing Industry*. Unpublished PhD Thesis, University of Durham.
- Feenstra, Robert. 1998. Integration of Trade and Disintegration of Production in the Global Economy, *Journal of Economic Perspectives*, 12:4, p. 31-50.
- Frankfort-Nachmias, Chava and David Nachmias. 1996. *Research Methods in the Social Sciences*, London: Arnold Publishers Group.
- Fraser, Iain and W. C. Horrace, 2003. 'Technical Efficiency of Australian Wool Production: Point and Confidence Interval Estimates'. *Journal of Productivity Analysis*. 20, p. 169-190.
- Fukunishi, Takahiro, Mayumi Murayama and Tatsumi Yamagata. 2006. *Industrialisation and Poverty Alleviation: Pro-poor Industrialisation Strategies Revisited*. UNIDO, Vienna.
- Gereffi, Garry, 1999. 'International Trade and Industrial Upgrading in Apparel Commodity Chain', *Journal of International Economics*, 48:1, p. 37-70.
- Gereffi, Gary, 2003. 'Global Value Chains and Industrial Upgrading: Current Challenges', A Paper Presented at the International Workshop on Standards, Trade and Value Chains: What Role for Developing Countries, Copenhagen
- Gereffi, Gary and Miguel Korzeniewicz (eds.) 1994. *Commodity Chains and Global Capitalism*, Westport, CT: Greenwood Publishing.
- Gereffi, Gary, Miguel Korzeniewicz and Roberto P. Korzeniewicz, 1994. 'Introduction: Global Commodity Chains', in Gereffi, Gary and Miguel Korzeniewicz (eds.) *Commodity Chains and Global Capitalism*, Westport, CT: Greenwood Publishing, p.1-14.
- Gereffi, Gary and Olga Memedovic. 2003. 'The Global Apparel Value Chain: What Prospects for Upgrading by Developing Countries?' Sectoral Studies Series, Vienna: UNIDO.

- Gereffi, Gary, John Humphrey and Timothy J. Sturgeon. 2005. "The Governance of Global Value Chains." *Review of International Political Economy*. 12:1. p.78-104
- Gereffi, Gary, John Humphrey and Timothy J. Sturgeon. 2001. 'Introduction: Globalisation, Value Chains and Development,' *IDS Bulletin*, 32:3. p 1-8
- Gereffi, Gary, 1994. 'The Organization of Buyer-Driven Global Commodity Chains: How US Retailers Shape Overseas Production Networks', in G. Gereffi and M. Korzeniewicz (eds.) *Commodity Chains and Global Capitalism*, Westport, CT.: Greenwood Publishing, p. 95-123.
- Gibbon, Peter, 2000. Back to Basics through Delocalisation: The Mauritian Garment Industry at the End of the Twentieth Century, *CDR Working Paper*, 00:7, Copenhagen: Centre for Development Research
- Gibbon, Peter, 2001a. 'Upgrading Primary Production: A Global Commodity Chain Approach', *World Development*, 29:2. p. 345-364.
- Gibbon, Peter, 2001b. 'Agro-Commodity Chains: An Introduction. *IDS Bulletin*, 32:3. p. 60- 68.
- Gibbon, Peter, 2002. 'At the Cutting Edge? Financialisation and UK Clothing Retailers' Global Sourcing Patterns and Practices', *Competition & Change*, 6:3 p. 89-308.
- Gibbon, Peter, 2003. The African Growth and Opportunity Act and the Global Commodity Chain for Clothing, *World Development*, 31:11. p. 1809-27.
- Gibbon, Peter, 2004. 'South Africa and the Global Commodity Chain for Clothing: Export Performance and Constraints', in McCormick Dorothy and Christian. M. Rogerson (eds.) *Clothing and Footwear in African Industrialization*, Pretoria: Africa Institute of South Africa.
- Gibbon, Peter and Stefano Ponte, 2005. *Trading Down: Africa, Value Chains, and the Global Economy*, Philadelphia: Temple University Press
- Glenday, Graham, and David Ndi, 2003. 'Assessing Export Platforms in Kenya' In Kimenyi, S. Mwangi, James M. Mbaku and Njuguna Mwaniki (eds.) *Restarting and Sustaining Growth and Development in Africa*. London: Aldershot Ashgate.
- Granér, Mats and Anders Isaksson. 2002. 'Export Performance in the Kenya Manufacturing Sector', in Bigsten, Arne and Peter Kimuyu (eds.) *Structure and Performance of Manufacturing in Kenya*, London: Palgrave Publishers.
- Greene, William H. 1993. 'The Econometric Approach to Efficiency Analysis', in Fried H.O., C.A.K. Lovell and S.S. Schmidt (eds.), *The Measurement of Productive Efficiency: Techniques and Applications*. New York: Oxford University Press,
- Greene, William H. 2002. *Alternative Panel Data Estimator for Stochastic Frontier Models*, <http://pages.stern.nyu.edu/~wgreene/publications/> Accessed September 15, 2008.
- Guba, G. and Lincoln, Y. S. 1994. 'Competing Paradigms in Qualitative Research', In N. K. Denzin, & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research*, Thousand Oaks, CA: SAGE.
- Hamilton, Gary and Nicole W. Biggart, 1988. Market, Culture and Authority: A Comparative Analysis of Management and Organisation in the Far East. *American Journal of Sociology*, 94:1, p. 552 -594.
- Henderson, Jeffrey, Peter Dickens, Martin Hess, Neil Coe and Wai-Chung H. Yeung 2002 'Global Production Networks and the Analysis of Economic Development', *Review of International Political Economy*, 9:3. p. 436-464.
- Himbara, David, 1994. 'The Failed Africanisation of Commerce and Industry in Kenya'. *World Development* 22:3. p. 469-482.

Holmstrom, Mark. 2001. 'Business Systems in India', in Gurli Jakobsen and Jens Erik Torp (eds.) *Understanding Business Systems in Developing Countries*, Sage Publications India Ltd, New Delhi, Chapter 6. p. 42-64.

Hopkins, Terrence K. and Immanuel Wallerstein. 1986. 'Commodity Chains in the World Economy Prior to 1800'. *Review*. 10:1. p. 157-170.

Hopkins, Terrence K. and Immanuel Wallerstein, 1994. 'Commodity Chains in the World Economy Prior to 1800.' in Gereffi, Gary and Miguel Korzeniewicz (eds.) *Commodity Chains and Global Capitalism*, Westport, CT: Greenwood Publishing, p. 17-48.

Horrace, W. C., and P. Schmidt, 1996. 'Confidence Statements for Efficiency Estimates from Stochastic Frontier Models.' *Journal of Productivity Analysis*. 7. p. 257-282.

Humphrey, John 2003. *Upgrading in Global Value Chains, Background Paper for the World Commission on Social Dimensions of Globalization*, Mimeo, Brighton: Institute of Development Studies, University of Sussex.

Humphrey, John and Hubert Schmitz. 2000. Governance and Upgrading: Linking Industrial Cluster and Global Value Chain. *IDS Working Paper 120*, Brighton: Institute of Development Studies, University of Sussex.

Humphrey, John and Hubert Schmitz. 2002. 'How Does Insertion in Global Value Chains affect Upgrading in Industrial Cluster', *Regional Studies*, 36:9. p. 1017-1027.

Humphrey, John and Hubert Schmitz. 2004. Chain Governance and Upgrading: Taking Stock. In Schmitz, Hubert (ed.). *Local Enterprises in Global Economy*, Cheltenham, UK: Edward Elgar Publishing Ltd.

Ikiara Moses M. and Lydia K. Ndirangu, 2004. 'The Prospects for Kenya's Clothing Exports under AGOA after 2004', in McCormick Dorothy and Christian M. Rogerson (eds.). *Clothing and Footwear in African Industrialization*. Pretoria: Africa Institute of South Africa

International Labour Organisation (ILO). 2000. *Labour Practices in the Footwear, Leather, Textiles and Clothing Industries*. Geneva: ILO

Jondrow, James, C. A. Knox Lovell, Ivan S. Materov and Peter Schmidt. 1982. 'On the Estimation of technical inefficiency in the Stochastic Frontier Production Function Model, *Journal of Econometrics* 19. p. 233-238.

Jovanovich, Boyan, 1982. 'Selection and the Evolution of Industry, *Econometrica*, 50:3, p. 649-670.

Kamau, Paul. 2007. *The Developmental Impact of Asian Drivers on Kenya with Emphasis on Textile and Clothing Manufacturing*. Final Report Submitted to OECD. April 2007.

Kaplinsky, Raphael. 2008. 'What Does the Rise of China Do for Industrialization in Sub-Saharan Africa?' *Review of African Political Economy*, No 115, p. 2-22

Kaplinsky, Raphael. 2000. 'Spreading the Gains from Globalisation: What can be Learnt from Value Chain Analysis', *Journal of Development Studies*, 37:2, p. 117-146.

Kaplinsky, Raphael and Mike Morris, 2008. 'Do the Asian Drivers Undermine Export-Oriented Industrialisation in SSA?' *World Development*. 36:2. p. 254-273.

Kaplinsky, Raphael and Mike Morris, 2007. *The Structure of Supply Chain and their Implications for Export Supply*. A Paper Presented During AERC Workshop, February 18-23, Dar es Salaam.

Kaplinsky, Raphael and Mike Morris, 2006. *Dangling by a Thread: How Sharp is the Chinese Scissors?* Final Report Prepared for DFID Trade Division, London.

Kaplinsky, Raphael and Mike Morris. 2002. *A Handbook for Value Chain Research*. Brighton Institute of Development Studies, University of Sussex. Also available from <http://www.globalvaluechains.org/tools/index.html>

Kaplinsky, Raphael and Olga Memedovic, 2003. *The Global Wood Furniture Value Chain. What Prospects for Upgrading by Developing Countries?* Vienna: UNIDO,

Kaplinsky, Raphael and Jeff Readman, 2000. *Globalisation and Upgrading: What Can (and Cannot) be Learnt from International Trade Statistics in the Wood Furniture Sector?* A Paper Presented During the Bellagio Value Chains Workshop. Rockefeller Conference Centre, Bellagio, Italy. September 25 – October 1 2000.

Kaplinsky Raphael, Dorothy McCormick and Mike Morris, 2007. *The Impact of China on Sub Saharan Africa* IDS Working Paper No. 291 of November 2007. Brighton: Institute of Development Studies, University of Sussex.

Kaplinsky, Raphael, Olga Memedovic, Mike Morris, and Jeff Readman, 2003. *The Global Wood Furniture Value Chain by Developing Countries: The Case of South Africa*, Vienna: UNIDO

Karunatilake, A. G. N. 1999. 'The WTO and the Textile and Clothing Industry of Sri Lanka', *Economic Review (Sri-Lankan People's Bank)*, 25:3/4, pp. 16-22

Kathuria, Sanjay, Will Martin and Anjali Bhardwaj, 2001. *Implications for South Asian Countries for Abolishing the Multifibre Arrangement*. Washington, D.C. World Bank.

Kenya, Republic of. 1972. *The Factories Act of 1962 (Rev 1972) CAP 514, Laws of Kenya*, Nairobi: Government Printer.

Kenya, Republic of. 1980. *The Regulations of Wages and Conditions of Employment Act of 1972 (Rev 2007) CAP 229 Laws of Kenya*. Nairobi: Government Printer.

Kenya, Republic of. 1986. *Sessional Paper No.1 of 1986 on 'Economic Management for Renewed Growth'* Nairobi: Government Printer.

Kenya, Republic of. 1990. *Export Processing Zone Act (Cap 517, Rev 1993, Laws of Kenya)* Nairobi: Government Printer.

Kenya, Republic of. 1996. *Sessional Paper No. 2 of 1996 on Industrial Transformation to the Year 2020*. Nairobi: Government Printer

Kenya, Republic of. 2001. *Position Paper on the Textile Industry*, Nairobi: Government Printer.

Kenya, Republic of. 2008. *Vision 2030: A Globally Competitive and Prosperous Kenya*. Nairobi: Government Printer.

Kenya, Republic of. Various Issues. *Economic Survey*, Nairobi: Government Printer.

Kenya, Republic of, Various Issues. *Statistical Abstract*. Nairobi: Government Printer.

Kheir-el-Din, Hanaa, 2002. 'Implementing the Agreement on Textiles and Clothing'. In Hoekman, Bernard, Aaditya Mattoo and Philip English (eds.). *Development, Trade, and the WTO: A Hand Book*, The World Bank, Washington DC.

Kumbhakar, Subal, 1997. 'Efficiency Estimation with Heteroscedasticity in a Panel Data Model', *Applied Economics*, 29, p 379-386.

Kiggundu, Rose, 2007. 'Learning to Change: Why the Fish Processing Clusters in Uganda Learned to Upgrade?' In Oyelaran-Oyeyinka, Banji and Dorothy McCormick (eds.), *Industrial Clusters and Innovation Systems in Africa: Institutions, Markets and Policy*, Tokyo: United Nations University Press.

Kimuyu, Peter. 2007. 'Corruption, Firm Growth and Export Propensity in Kenya', *International Journal of Social Economics*, 34:3. p. 197-217

- Kimuyu, Peter, 1999. 'The Structure and Performance of the Manufacturing Sector in Kenya', in Kimuyu, Peter, Mbui Wagacha and Okwach Abagi (Eds.) *Kenya's Strategic Policies for the 21<sup>st</sup> Century: Macroeconomic and Sectoral Choices*, Nairobi: IPAR
- Kindiki, Moses. 2006. *Liberalisation of the Textiles and Clothing Sector – How competitive is the Kenyan Apparel Sub Sector Under the African Growth and Opportunity Act?* A paper presented during the African Clothing and Footwear Research Network Conference at Glenburn Lodge, Muldersdrift, South Africa 24-26 May 2006.
- Kinyanjui, Mary Njeri and Dorothy McCormick. 2003. Value Chains in Small Scale Garment Producers in Nairobi: Challenges in Shifting from the Old Global Regimes of Import Substitution to a More Liberalised Global Regime, *IDS Working Paper No. 536*, Nairobi: Institute for Development Studies, University of Nairobi
- Kinyanjui, Mary Njeri, Dorothy McCormick and Peter Ligulu. 2004. 'Clothing and footwear in Kenya: policy and research concerns', in McCormick, Dorothy and Christian M. Rogerson (eds.) *Clothing and Footwear in African Industrialization*, Pretoria: Africa Institute of South Africa
- Kishimoto, Chikashi. 2004. 'Clustering and Upgrading in Global Value Chains: The case of Taiwanese Personal Computer Industry,' In Schmitz, Hubert (ed.) *Local Enterprises in the Global Economy: Issues of Governance and Upgrading*, Cheltenham: Edward Elgar. p. 233-264
- Kishimoto, Chikashi. 2003. 'Upgrading in Taiwanese Computer Cluster: Transformation of its Production and Knowledge Systems' *IDS Working Paper No. 186*. Brighton: Institute of Development Studies.
- Kodde, David A. and Franz C. Palm, 1986, Wald Criteria for Jointly Testing Equality and Inequality Restrictions, *Econometrica*, 54:5, p. 1243-1248
- Kohlbacher, F. 2006. 'The Use of Qualitative Content Analysis in Case Study Research', *Forum Qualitative Social Research*, 17:1, Art 21
- Kothari, C. R. 2003. *Research Methodology: Methods and Techniques*, New Delhi: Wishwa Prakashan Ltd.
- Kristensen, Peer Hull. 1996. 'Variations in the Nature of the Firm in Europe', in Whitley, Richard and Peer Hull Kristensen (eds.). *The Changing European Firm: Limits to Convergence*. London: Rutledge.
- Krugman, Paul R. 1981. 'Intra-industry Specialisation and the Gains from Trade.' *Chicago Journals*, 89:5 p. 14 – 33.
- Lall, Sajaya. 1991. 'Marketing Barriers Facing Developing Countries' Manufactured Exporters: A Conceptual Note, *Journal of Development Studies*. 27:4. p. 137-50.
- Lande, Stephen, Michael R. Gale, Rajeev Arora and Navdeep Sodhi. 2005. *Impact of the End of MFA Quotas on COMESA's Textile and Apparel Exports Under AGOA: Can the Sub-Saharan African Textile and Apparel Survive and Grow in the Post-MFA World?* Report to USAID by Manchester Trade Team. Available at [www.ecatradehub.com/reports/rp\\_downloads/2005\\_MFA\\_Final\\_report.pdf](http://www.ecatradehub.com/reports/rp_downloads/2005_MFA_Final_report.pdf). Accessed October, 27 2006.
- Latruffe, Laure, Kelvin Balcombe, Sophia Davidova, and Katarzyna Zawalinska, 2004. Determinants of Technical Efficiency of Crops and Livestock Farms in Poland, *Applied Economics*, 36. p. 1255-1263.
- Lee, L. F. and W.G. Tyler, 1978. 'The Stochastic Production Function and Average Efficiency: An Empirical Analysis'. *Journal of Econometrics*. 7:2, p. 383-389.
- Lin, Willy, 2003. *Implications of the end of the WTO Agreement on Textile and Clothing*, A Paper Presented at the 15<sup>th</sup> Pacific Economic Cooperation Council Workshop, International Convention Centre, Singapore, September 1 2003.
- Little I.M., D. Mazumdar and J. M. Page Jr. 1987. *Small Manufacturing Enterprises: A Comparative Analysis of India and Other Economies*. Washington DC: The World Bank.

- Lundvall, Karl, 1999. *Essays on Manufacturing Production in a Developing Economy: Kenya 1992-95*, Ekonomiska Studier 93, PhD Thesis, Department of Economics, Göteborg University, Göteborg Sweden.
- Lundvall, Karl and George E. Battese, 2000. 'Firm Size, Age and Efficiency: Evidence from Kenyan Manufacturing Firms', *Journal of Development Studies*, 36: 3. p. 146-163.
- Lundvall, Karl, Walter Ochoro and Lennart Hjalmarsson, 2002. 'Productivity and Technical Efficiency', in Bigsten, Arne and Peter Kimuyu, (eds.) *Structure and Performance of Manufacturing in Kenya*, Palgrave Publishers, London, p. 151-172.
- Marcelo Raffaelli and Tripti Jenkins. 1995. *The Drafting of the History on Textiles and Clothing*, Geneva: International Textiles and Clothing Bureau.
- Mattoo, Aaditya, Devesh Roy, and Arvind Subramanian. 2002. 'The African Growth and Opportunity Act and Its Rules of Origin: Generosity Undermined?' *World Bank Policy Research Working Paper No. 2908*. Washington D.C: World Bank. available from [www.worldbank.org](http://www.worldbank.org).
- Mbwambo, Andrew H. 2005. *Strategies and Firm-Level Institutions in Small-Scale Enterprise Performance in Tanzania: The Case of Small-Scale Garment Manufacturing Firms*, Unpublished PhD Thesis, University of Nairobi, Nairobi.
- McCormick, Dorothy. 2007. 'Industrialisation through Cluster Upgrading: Theoretical Perspectives,' In Oyelaran-Oyeyinka, Banji and Dorothy McCormick (eds.), *Industrial Clusters and Innovation Systems in Africa: Institutions, Markets and Policy*, Tokyo: United Nations University Press.
- McCormick, Dorothy. 2001. 'Value Chains and the Business System: Applying a Simplified Model to Kenya's Garment Industry', *IDS Bulletin*, 32:3, p. 105-115
- McCormick, Dorothy, 1999a. 'Policies Affecting Kenyan Industrialisation: 1964-1994', In N. Ng'ethe and W. Owino (eds.) *From Sessional Paper No. 10 to Structural Adjustments: Towards Indigenising the Policy Debate*, Nairobi: Institute of Policy Analysis and Research (IPAR).
- McCormick, Dorothy, 1999b. 'African Enterprise Clusters and Industrialization: Theory and Reality.' *World Development*, 27:9. p. 1531-1551.
- McCormick, Dorothy, 1999c. '*Institutions and Industrial Development: A Case of Garments and Textiles in South Africa*'. Mimeo. Institute for Development Studies, University of Nairobi.
- McCormick, Dorothy and Christian M. Rogerson. 2004. 'Introduction: Researching Clothing and Footwear in African Industrialisation', in McCormick Dorothy and Christian M. Rogerson (eds.) *Clothing and Footwear in African Industrialisation*, Pretoria: Africa Institute of South Africa.
- McCormick, Dorothy and Hubert Schmitz. 2002. *Manual for Value Chain Research on Home Workers in the Garment Industry*. Brighton: Institute of Development Studies, University of Sussex.
- McCormick, Dorothy and Poul Ove Pedersen. 1999. Globalisation and Regionalisation of Kenya's Foreign Trade and Production, *CDR Working Paper, 99 9*. Copenhagen: Centre for Development Research
- McCormick, Dorothy, Peter Kimuyu and Mary Kinyanjui, 2007. 'Textiles and Clothing: Global Players and Local Struggles, in McCormick, Dorothy, Patrick O. Alila and Mary Omosa (eds.) *Business in Kenya: Institutions and Interactions*, Nairobi: University of Nairobi Press.
- McCormick, Dorothy, Paul Kamau and Peter Ligulu. 2006. 'Post-Multifiber Arrangement Analysis of the Textile and Garment Sectors in Kenya'. *IDS Bulletin*, 37:1, p. 81-88.
- McCormick, Dorothy, Peter Kimuyu and Mary Njeri Kinyanjui. 2002. *Can Micro-Enterprises export? Preliminary Evidence from Nairobi's Garment Sector*, A Paper Presented during the International Conference on Business Systems in Africa, Travellers Beach Hotel, Mombasa, Kenya 26-27 September 2002.

McCormick, Dorothy, Peter Kimuyu and Mary Njeri Kinyanjui, 2001. 'Kenya's Garment Industry: An Institutional View of Medium and Large Firms', *IDS Working Paper, No. 531*, Institute for Development Studies, University of Nairobi.

McCormick, Dorothy, Mary Njeri Kinyanjui and Grace Ongile. 1997. Growth and Barriers to Growth Among Nairobi's Small and Medium-sized Garment Producers, *World Development*, 25:7, p. 1095-1110.

Meeusen, W. and J. van den Broeck. 1977. 'Efficiency Estimation from Cobb-Douglas Production Function with Composed Error', *International Economic Review*, 18:2. p. 435-444.

Memedovic, Olga. 2004. *Inserting Local Industries into Global Value Chains and Global Production Networks: Opportunities and Challenges for Upgrading with a Focus on Asia, China's Rising Competitiveness and the Phasing out of the Multi-Fibre Arrangements*, Vienna: UNIDO.

Mengistae Taye. 1996. *Age –Size, Effects in Productive Efficiency: A Second Test of the Passive Learning Model*, <http://www.csae.ox.ac.uk/workingpapers/pdfs/9602text.pdf>, accessed May 26, 2007.

Mengistae, Taye and Catherine Pattillo. 2004. "Export Orientation and Productivity in Sub-Saharan Africa", *IMF Staff Papers, Vol. 51 No.2. p. 327-353*.

Morris, Mike. 2006. China's Dominance of Global Clothing and Textiles: Is Preferential Trade Access an Answer for sub-Saharan Africa? *IDS Bulletin*, 37:1. p. 89-97.

Morris, Mike and Leanne Sedowski. 2006. *The Competitive Dynamics of the Clothing Industry in Madagascar in the post-MFA Environment*, A paper presented during the African Clothing and Footwear Research Network Conference at Glenburn Lodge, Muldersdrift, South Africa 24-26 May 2006.

Morris, Mike, Justin Barnes and Jeanne Esselaar. 2005. 'Globalisation, the Unchanged Global Dynamics of the Clothing and Textiles Value Chains and the Impact on Sub-Saharan Africa', Draft Chapter in Memedovic, Oglja (ed.) *Global Value Chains and Production Networks: Prospects for Upgrading by Development Countries*. Vienna: UNIDO.

Morrisey, O. and Filatotchev, I. 2000. 'Globalisation and Trade: the Implications for Exports from Marginalised Economies', *Journal of Development Studies*, 37:2. p. 1-43.

Morrison, Andrea, Carlo Pietrobelli & Roberta Rabelotti, 2008. *Global Value Chains and Technological Capabilities: A Framework to Study Learning and Innovation in Developing Countries*. *Oxford Development Studies*, 36:1 p. 39 – 58.

Mugenda Olive M. and Abel M. Mugenda. 1999. *Research Methods: Quantitative and Qualitative Approaches*, Nairobi: Acts Press.

Munir, Ahmad and Diaz Dinora, 2008. *'A Reality Check of Three Years of Post Quota Trade in Textiles and Why so Many Predictions of Doom Proved Unfounded'*, Geneva: International Textiles and Clothing Bureau.

Mwega, Francis M. and Njuguna S. Ndungu. 2001. 'Kenya's Recent Exchange-Rate Policy and Manufactured Export Performance'. In Fosu, Augustin K., Saleh M. Nsouli, and Aristomene Varoudakis (eds.), *Policies to Promote Competitiveness in Manufacturing in Sub-Saharan Africa*. Paris: OECD.

Nadvi, Khalid. 2004. 'The Effect of Global Standards on Local Producers: A Pakistani Case Study', In Schmitz, Hubert (ed.) *Local Enterprises in the Global Economy: Issues of Governance and Upgrading*, Cheltenham: Edward Elgar.

Nadvi, Khalid, John T. Thoburn, B. T. Thang, N. T. Thanh Ha, N. T. Hoa, D. A. Le and E. B. De Armas. 2004. 'Vietnam in the Global Garment and Textile Value Chain: Impacts on Firms and Workers', *Journal of International Development*. 16:1. p. 111-123.

Nathan Associates. 2002. *Changes in Global Trade Rules for Textiles and Apparel: Implications for Developing Countries*. Virginia. Nathan Associates Press.

- Naumann, Eckart, 2005. *Textiles and Clothing: Reflections on the Sector's Integration into the Post-Quota Environment*. Tralac Working Paper No. 1/2005. March 2005.
- Navas-Alemán, Lizbeth. 2006. *Opportunities and Obstacles for Industrial Upgrading of Brazilian Footwear and Furniture Firms: A Comparison of Global and National Value Chains*, Unpublished PhD Thesis. Brighton: Institute of Development Studies. University of Sussex.
- Neuman, Lawrence W., 2006 *Social Research Methods: Qualitative and Quantitative Approaches*. Boston: Allyn and Bacon.
- Ngui, Diana Mukwate, 2008. *On the Efficiency of the Kenyan Manufacturing Sector: An Empirical Analysis*, Shaker Verlag, Aachen, Germany.
- Ngui, Diana Mukwate, Claudia Becker and Walter Thomi. 2007. *Firm Efficiency Differences During the Structural Reform Period: Empirical Evidence from the Kenyan Manufacturing Firms*, Discussion Papers in Economics, No. 57, December 2007, Martin-Luther-University Halle-Wittenberg, Aachen.
- Nkya, Estomih. 1998. 'Institutional Economics and Economic Policy Reforms: Integrative Review and Research Possibilities in Tanzania', *Economics and Development Papers* Mzumbe University, No. 1 of 1998. p. 1-19.
- Nordås, Hildegunn Kyvik, 2005. "Labour Implications of the Textiles and Clothing Quota Phase-Out". ILO Discussion Paper Number 224, Geneva: International Labour Organisation.
- Nordås, Hildegunn Kyvik, 2004. *The Global Textile and Clothing Industry Post Agreement on Textiles and Clothing*, WTO Discussion Paper No. 5, Geneva.
- North, Douglass. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.
- OECD, 2004, *A New World Map in Textiles and Clothing: Adjusting to Change*, Geneva: Organisation for Economic and Cooperation and Development (OECD).
- Omolo, Jacob O. 2006. 'The Textiles and Clothing Industry in Kenya', in Hebert Jauch and Rudolf Traub-Merz (eds.) *The Future of the Textile and Clothing Industry in Sub-Saharan Africa*, Friedrich-Ebert-Stiftung, Bonn
- Owens, T. and Wood, A. 1997. Export Oriented Industrialization Through Primary Processing? *World Development*, 25: 9. p. 1453-1470.
- Pack, Howard. 1987. *Productivity, Technology and Industrial Development: A Case Study in Textiles*. Washington D.C: The World Bank.
- Palpacuer, Florence. 2006. 'The Global Sourcing Patterns of French Clothing Retailers: Determinants and Implications for Suppliers' Industrial Upgrading', *Environment and Planning*, 38:12. p. 2271-2283.
- Palpacuer, Florence, Peter Gibbon, and Lotte Thompsen, 2005. 'New Challenges for Developing Country Suppliers in Global Clothing Chains: A Comparative European Perspective'. *World Development*, 33:3 p. 409-430.
- Pedersen, Poul Ove and Dorothy McCormick. 1999. 'African Business Systems in a Globalising World,' *The Journal of Modern African Studies*, 37:1 p. 109-136.
- Phelps, Nicholas A., John C. H Stilwell and Roseline Wanjiru 2009. 'Broken Chain? AGOA and Foreign Direct Investment in the Kenyan Clothing Industry.' *World Development*, 37:2, p. 314 -325.
- Phelps, Nicholas A. John C. H. Stilwell and Roseline Wanjiru. 2008. 'Missing the GO in AGOA? Growth and Constraints of Foreign Direct Investment in the Kenyan Clothing Industry.' *Transnational Corporations*, 17: 2. p. 66 – 106.

Rademakers, Martijn F.L. 1997. The Institutional Embeddedness of Inter-Firm Relationships in Indonesia, *Occasional Paper No. 10*, Copenhagen Business School, Presented During the Workshop on Business Systems in the South. Copenhagen. 22-24 January 1997.

Raffaelli, Marcelo and Tripti Jenkins. 1995. *The Drafting of the Agreement on Textiles and Clothing*. Geneva: International Textiles and Clothing Bureau.

Raikes, Philip, Michael Friis Jensen & Stefano Ponte. 2000. 'Global Commodity Chain Analysis and the French Filière Approach: Comparison and Critique'. *CDR Working Paper Subseries 00:3*. Copenhagen: Centre for Development Research.

Rasiah, Rajah. 2004. 'Technological Intensity and Export Incidence: A Study of Foreign and Local Auto-Parts, Electronics, and Garment Firms in Indonesia', *UNU/INTECH Discussion Paper, No. 5*, Maastricht

Rasiah, Rajah 1997. A Systems Approach to Understanding Malaysia's Industrialisation, *Occasional Paper No. 21*, Copenhagen Business School, Presented during the Workshop on Business Systems in the South 22-24 January 1997.

Razmi, Arslan and Robert A. Blecker. 2006. "Developing Country Exports of Manufactures: Moving Up the Ladder to Escape the Fallacy of Composition?" *Working Paper Series No. 2006-06*, Department of Economics, American University: <http://www.american.edu/academic.depts/cas/econ/workingpapers/workpap.htm>

Remenyi, Dan. 2006. *Introduction to Qualitative Research*. Dublin: Trinity College Dublin Press.

Rivoli, Pietra. 2005. *Travels of a T-Shirt in the Global Economy: An Economist Examines the Markets, Power, and Politics of World Trade*, Hoboken, NJ: John Wiley & Sons.

Roberts, Mark J. and James R. Tybout. 1997 'The Decision to Export in Columbia: An Empirical Model of Entry with Sunk Costs'. *American Economic Review*. 87:4. p. 545-64.

Roberts, Simon and John T. Thoburn, 2004. 'Globalisation and the South African textiles industry: Impacts on firms and workers', *Journal of International Development*, 16:1 p. 125-139.

Rolfe, Robert J. and Douglas P. Woodward, 2005. 'African Apparel Exports, AGOA, and the Trade Preference Illusion'. *Global Economy Journal*, 5:3. p. 1- 26.

Schmitz, Hubert. 2004. 'Globalized Localities: Introduction.' In Schmitz, Hubert (ed.) *Local Enterprises in the Global Economy: Issues of Governance and Upgrading*, Cheltenham: Edward Elgar. p. 1-19.

Schmitz, Hubert. 2005. *Understanding and Enhancing the Opportunities of Local Producers in the Global Garment and Footwear Industry: What Does the Value Chain Approach Offer?* Research Report Submitted to GTZ, Federal Ministry for Economic Cooperation and Development, Eschborn, Germany

Schmitz, Hubert. 2006. 'Learning and Earning in Global Garment and Footwear Chains'. *The European Journal of Development Research*, 18:4. p. 546-571.

Schmitz, Hubert and Peter Knorringa. 2000. 'Learning from Global Buyers'. *Journal of Development Studies*. 37:2. p. 1627-1650.

Silverman, Daniel, 2000. *Doing Qualitative Research: A Practical Handbook*, London: Sage Publications Ltd.

Smith, David A. 1996. 'Going South: Global Restructuring and Garment Production in Three East Asian Cases', *Asian Perspective* 20:2. p. 211-241.

Söderbom, Måns. 2001. *Constraints and Opportunities in Kenyan Manufacturing: Report on the Kenyan Manufacturing Enterprise Survey 2000 REP/2001-03* available at <http://www.csae.ox.ac.uk/reports/main.html>. Last accessed 2<sup>nd</sup> February 2008.

- Söderbom, Måns. 2002. *What Drives Manufactured Exports in Africa? Evidence from Ghana, Kenya and Zimbabwe*, UNIDO 22574, Vienna.
- Söderbom, Måns. 2004. *Productivity, Exports and Firm Dynamics in Kenya 1999-2002*, <https://www.unido.org/file-storage/download/?file%5fid=58989>. accessed August 23, 2007.
- Söderbom, Måns and Francis Teal. 2004. 'Size and Efficiency in African Manufacturing Firms, Evidence from Firm-level Panel Data.' *Journal of Development Economics*, 73:1, p. 369-394.
- Sørensen, Olav Jull and John Kuada. 2001. 'Institutional Context of Ghanaian Firms and Cross-national Inter-firm Relations'. in Gurli Jakobsen and Jens Erik Torp (eds.). *Understanding Business Systems in Developing Countries*, Sage Publications India Ltd, New Delhi, Chapter 6. p. 163-201.
- Stiglitz, Joseph E. 1992. "An Alternative Tactics and Strategies for Economic Development", in Dutt, A.K. and Jameson, K.P. (eds.) *New Directions in Development Economics*, London, Edward Elgar Publishers.
- Sturgeon, Timothy J., 2001. 'How do We Define Value Chains and Production Networks?' *IDS Bulletin*, 32:3. p. 9-18.
- Sturgeon, Timothy J., 2007. 'From Commodity Chains to Value Chains: Interdisciplinary Theory Building in an Age of Globalisation', in Bair Jennifer (ed.) *Frontiers of Commodity Chain Research*, Stanford: Stanford University Press.
- Tashakkori, A. and Teddlie, C., 2003. *Handbook of Mixed Methods in the Social and Behavioural Sciences*, Thousands Oaks, CA: Sage Publishers.
- Teal, Francis. 1999. 'Why can Mauritius Export Manufactures and Ghana Not?' *The World Economy*, 22:7. p. 981-994.
- Tewari, Meenu, 1999. 'Successful Adjustment in Indian Industry: The case of Ludhiana's Woollen Knitwear Industry', *World Development* 27, p. 1651-1672.
- Tewari, Meenu, 2004. 'Regional Repositioning of within India's Garment Industry: Elements of a Third Generation Narrative in Global Commodity Chains.' Mimeo. Department of City and Regional Planning, University of North Carolina, Chapel Hill.
- Tewari, Meenu, 2006. 'Adjustment in India's Textile and Apparel Industry: Reworking Historical Legacies in a Post-MFA World.' *Environment and Planning*, 38:1, p. 2325 -2344.
- Thoburn, John T., Nguyen Thi Thanh Ha and Nguyen Thi Hoa, 2004. Vietnam in the Global Garment and Textile Value Chain: Impacts on Firms and Workers, *Journal of International Development*. 16:1. p. 111-123.
- Truett, D. B, and Truett, L. J., 1993. 'Trade Preferences and Exports of Manufactures: A Case Study of Bolivia and Brazil', *Review of World Economics*, 129:3. p. 573-590.
- Tybout, James R., 2000 'Manufacturing Firms in Developing Countries: How Well They Do and Why?' *Journal of Economic Literature*. 38:1. p. 11- 44.
- Tybout, James R. and Daniel M. Westbrook, 1995. 'Trade Liberalization and Dimensions of Efficiency Change in Mexican Manufacturing Industries'. *Journal of International Economics*. 39:1. p. 53-78.
- USAID, 2005. "Impact of the End of MFA Quotas and COMESA's Textile and Apparel Exports under AGOA: Can the Sub-Saharan Africa Textile and Apparel Industry Survive and Grow in the Post-MFA World?", Report prepared for the USAID East and Central Africa Global Competitiveness Trade Hub, Nairobi.
- USTR, 2007, *Comprehensive Report on US Trade and Investment Policy Toward sub-Saharan Africa and Implementation of the African Growth and Opportunity Act*, Annual Report (May). Washington D.C. United States Trade Representative Office.

- Van Dooren, R. and G. A. Zarate-Hoyos. 2003. 'The Insertion of Rural Areas into Global Markets: a Comparison of Garment Production in Yucatan and Laguna, Mexico', *Journal of Latin American Studies*, 35:3, p 571-592.
- Varian, Hal R., 1999. *Intermediate Microeconomics: A Modern Approach*, New Delhi: East-West Press.
- Vijayabaskar, M. 2002. Garment Industry in India. In Joshi Gopal (ed.) *Garment Industry in South Asia: Rags or Riches?* New Delhi. International Labour Organisation.
- Wad, Peter. 1997. Business Systems and Industrial Relations in Malaysia: The Restructuring of the Automobile Industry, *Occasional Paper No. 14*, Copenhagen Business School, Presented during the Workshop on Business Systems in the South 22-24 January 1997.
- Wang, Hung-Jen, 2002. 'Heteroscedasticity and Non-Monotonic Efficiency Effects of a Stochastic Frontier Model'. *Journal of Productivity Analysis*. 18. p 241-253.
- Weston, Ann, Paul Kamau, and Aniket Bhushan. 2008. "The End of the MFA and Informal Work in the Global Garment Industry". A Report prepared for Women in the Informal Economy Globalizing and Organizing (WIEGO). Ottawa: The North-South Institute, September 2008.
- Whitley, Richard. 1992. *Business Systems in East Asia: Firms, Markets, and Societies*, London: Sage.
- Whitley, Richard. 1994, Dominant Forms of Economic Organisations in Market Economies, *Organisation Studies*, 15:2 p. 152-282.
- Whitley, Richard. 1996. Business System and Global Commodity Chains: Competing or Complementary Forms of Economic Organisation? *Competition and Change*, 1:1. p. 411-425.
- Whitley, Richard. 2003. 'How National are Business Systems? The Role of Different State Types and Complementary Institutions in Constructing Homogeneous Systems of Economic Coordination and Control.' Paper Presented to the Workshop on National Business System in the New Global Context, Oslo, 2003.
- Wonnacott, T. H and R. J. Wonnacott. 1990. *Introductory Statistics for Business and Economics*, John Willey & Sons, Toronto.
- Wood Adrian. 2001. 'Value Chains: An Economist's Perspective', *IDS Bulletin*, 32:3, p. 41-46.
- World Bank. 2007. *Vertical and Regional Integration to Promote African Textiles and Clothing Exports: A Close Knit Family?* Washington D.C. World Bank.
- World Bank. 2007. *Vertical and Regional Integration to Promote African Textiles and Clothing Exports. A Close Knit Family?* Washington D.C. World Bank.
- Wyman, Diana. 2006. "Trade Liberalisation and the Canadian Clothing Market". *Canadian Economic Observer*. December 2006. Ottawa: International Trade Canada.
- Yin, R. M. 1994, *Case Study Research: Design and Methods*, Sage Publications, Inc. London.
- Zeufack, A. 2002. 'Export Performance in Africa and Asia's Manufacturing: Evidence From Firm-Level Data', *Journal of African Economies*, 10:3, p 258-281.

## Websites

Eurostat (2007) *EuroStat Year Book -2006-07*,  
[http://epp.eurostat.ec.europa.eu/portal/page?\\_pageid=1090\\_30070682\\_1090\\_33076576&dad=portal&schema=PORTAL](http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1090_30070682_1090_33076576&dad=portal&schema=PORTAL), last  
accessed 27<sup>th</sup> April 2007

Strategies, (2007) *Customised Reports on International Trade Statistics*, Statistics Canada,  
[http://strategis.ic.gc.ca/sc\\_mrkti/tdst/engdoc/tr\\_homep.html](http://strategis.ic.gc.ca/sc_mrkti/tdst/engdoc/tr_homep.html), last accessed 25<sup>th</sup> April 2007

International Trade Statistics. [www.intracen.org](http://www.intracen.org) "International Trade Statistics." last accessed 23<sup>rd</sup> April 2007

## APPENDIX

### Appendix 1: AGOA Eligible SSA Countries by July 2009

COUNTRY	DATE DECLARED AGOA ELIGIBLE	DATE DECLARED ELIGIBLE FOR SPECIAL RULE FOR APPAREL	ELIGIBLE FOR SPECIAL RULE FOR APPAREL
(Republic of) Angola	30-Dec-03		
(Republic of) Benin	02-Oct-00	28-Jan-04	Yes
(Republic of) Botswana	02-Oct-00	27-Aug-01	Yes
Burkina Faso	10-Dec-04	04-Aug-06	Yes
(Republic of) Burundi	01-Jan-06		
(Republic of) Cameroon	02-Oct-00	01-Mar-02	Yes
(Republic of) Cape Verde	02-Oct-00	28-Aug-02	Yes
(Republic of) Chad	02-Oct-00	26-Apr-06	Yes
(Union of the) Comores	01-Jul-08		
(Republic of) Congo	02-Oct-00		
(Democratic Republic of) Congo*	01-Jan-03		
(Republic of) Djibouti	02-Oct-00		
Ethiopia	02-Oct-00	02-Aug-01	Yes
Gabonese (Republic)	02-Oct-00		No
The Gambia	01-Jan-03	28-Apr-08	Yes
(Republic of) Ghana	02-Oct-00	20-Mar-02	Yes
(Republic of) Guinea	02-Oct-00		
(Republic of) Guinea-Bissau	02-Oct-00		
(Republic of) Kenya	02-Oct-00	18-Jan-01	Yes
(Kingdom of) Lesotho	02-Oct-00	23-Apr-01	Yes
(Republic of) Liberia	29-Dec-06		Yes
(Republic of) Madagascar	02-Oct-00	06-Mar-01	Yes
(Republic of) Malawi	02-Oct-00	15-Aug-01	Yes
(Republic of) Mali	02-Oct-00	11-Dec-03	Yes
(Republic of) Mauritius	02-Oct-00	18-Jan-01	Yes****
(Islamic Republic of) Mauritania	28-Jun-07		
(Republic of) Mozambique	02-Oct-00	08-Feb-02	Yes
(Republic of) Namibia	02-Oct-00	03-Dec-01	Yes
(Republic of) Niger	02-Oct-00	17-Dec-03	Yes
(Federal Republic of) Nigeria	02-Oct-00	14-Jul-04	Yes
(Republic of) Rwanda	02-Oct-00	04-Mar-03	Yes
(Democratic of Republic of) Sao Tome and Principe	02-Oct-00		
(Republic of) Senegal	02-Oct-00	23-Apr-02	Yes
(Republic of) Seychelles	02-Oct-00		No
(Republic of) Sierra Leone**	23-Oct-02	05-Apr-04	Yes
(Republic of) South Africa	02-Oct-00	07-Mar-01	No
(Kingdom of) Swaziland	02-Oct-00	26-Jul-01	Yes
(United Republic of) Tanzania	02-Oct-00	04-Feb-02	Yes
(Republic of) Togo***	21-Apr-08		Yes
(Republic of) Uganda	02-Oct-00	23-Oct-01	Yes
(Republic of) Zambia	02-Oct-00	17-Dec-01	Yes

#### NOTES:

\* Effective date of designation of the Republic of Sierra Leone as an AGOA beneficiary country was determined by the U.S. Trade Representative to be October 23, 2002

\*\* Effective date of designation of the Democratic Republic of Congo as an AGOA beneficiary country was determined by the U.S. Trade Representative to be October 31, 2003

\*\*\* Date of Federal Register Notice proclaiming Republic of Togo as Beneficiary under AGOA and applicable to goods entered from 30 days after date of publication

\*\*\*\* As per HR 7222 legislative amendment

Source: USTR, 2007; [http://www.agoa.info/index.php?view=about&story=country\\_eligibility](http://www.agoa.info/index.php?view=about&story=country_eligibility) last accessed on 8<sup>th</sup> July 2009

## **Appendix 2: Key Informant Interview Guide**

### **Upgrading and Technical Efficiency in Kenyan Garment Firms**

Name (Optional):

Organization:

Position:

Interview Date:

#### **Issues for Discussion with Key-Informants**

1. Establish the role of the organization/department in textile and clothing value chain
2. Enquire about the current state of textile and clothing sector in Kenya
3. Main markets for Kenyan garment products? What factors influence these markets?
4. Establish the relevance of AGOA and MFA termination in the growth of Kenyan clothing and textile exports. Threats from China and India since 2005
5. Establish relevant policies that guide production and trade in the garment industry
6. Role of different stakeholders in promoting garment industry in Kenya, challenges and opportunities
7. The structure of the textile and clothing value chains (fibres, intermediate components and end products). At what level can Kenya play in the global garment value chain?
8. How would you describe the patterns of sourcing raw materials by Kenyan garment firms? What factors influence these patterns?
9. Establish efforts by different stakeholders in maintaining the status of textile and clothing industry (Government, MTI, Industries, KIA, EPZA, KAM, COTU, etc)
10. Establish the possible impacts of Asian drivers on labour outcomes in textile and clothing in Kenya (prompt on wage gap, gender issues, labour standards, and labour unions).
11. How would you describe the structure of the FDI in the Kenyan garment industry?
12. The implications of second-hand clothes and new clothes from Asian countries in Kenya
13. Enquire about the quantitative indicators for the following textile and clothing series (2000-2005):
  - Production levels
  - Exports (with regional disaggregation US and EU)
  - Imports
  - Average tariff rates for garment product (in Kenya and main markets)
14. What is the future of the Kenyan textiles and clothing industry in the post-MFA?

15. On a scale of 1-5 how important are the following factors in determining upgrading of Kenyan garment manufacturing firms: (1 – least important and 5 –most important)

Indicator	1	2	3	4	5
Prices					
Increased productivity					
Innovative designs					
Quality products					
Investment in machinery					
Training workers					
Labour costs					
Foreign skills (expatriates)					
New sources of raw materials					
New markets					
Lead times (quick turn around)					
Government policies					

16. On a scale of 1-5, how important are the following factors in selecting the supplier for your products (*Buyers only*)

Indicator	1	2	3	4	5
Prices					
Quality products					
Design capabilities					
Availability of raw materials					
AGOA trade preference					
Lead times					
Reliability					
Flexibility of the firm					
Infrastructures					
Local Politics					
Government policies					

17. In your opinion, what are the major threats facing the garment industry in Kenya?
18. In your opinion, what could be done to facilitate growth of the garment industry in Kenya?

**The End**

### **Appendix 3: Case Study Interview Guide**

#### **Upgrading and Technical Efficiency in Kenyan Garment Firms**

Name of the Firm:

Respondent's Name (Optional):

Position:

Contact Details:

Interview Date:

Interviewers Name (s)

- 1) History of the firm (year of establishment, ownership, turning points, location, current employment and employment trends)
- 2) Main garment products: (woven and knitted, percentage, specific types, factors determining the production, etc).
- 3) Markets and distribution (main markets, subsidiary markets, percentages, different activities involved from order to market, any recent changes of the market, key regular buyers, how were they identified, their importance, communication with buyers, relationships, intermediaries etc).
- 4) Comment on the relevance of the following organisations to garment industry in Kenya (Kenya Association of Manufacturers, Kenya Industrial Research and Development Institute, Kenya Bureau of Standards, EPZA, Export Promotion Council, Kenya Investment Authority, Ministry of Trade, Ministry of Industrialisation, United Business Association, others)
- 5) What can you tell us about the garment industry in Kenya?
- 6) Method of sending goods to buyers. Channels for marketing products in different markets and technology systems involved. Share of sales in each market.
- 7) Main competitors in each market and strategies adopted by the firm in facing competition.
- 8) The impact of MFA termination and AGOA on the markets involved
- 9) Main sources of product designs. Who undertakes the designing function and the role of buyers/customers in the design? Share of design in total value added.
- 10) Production process in the firm (assembly line or make through). Lead times, quality of production, recent changes. Quality of products (determinants, key drivers, limitations, etc). Production targets and on- time deliveries. Capacity utilisation.
- 11) Labour force in the firm (costs, size, gender, skills, unionisation).

- 12) Major raw materials in the production (fabric & yarn, sources, suppliers and relationship, identification, assistance from suppliers).
- 13) Machinery (main types, key machines, sources, method of sourcing, challenges)
- 14) Competitiveness of the firm in different markets.
- 15) Government support to the firm. Role of different institutions in the garment industry. Assistance from different institutions.
- 16) Membership to business associations
- 17) Opportunities and challenges facing growth of the this industry (prompt)
- 18) Understanding of industrial upgrading and strategies by the firm. What can be done to support the garment industry in Kenya? (Financial arrangements, organisations, second-hand clothes, WTO rules, Asian Drivers etc).
- 19) How do government rules regulations policies and incentives affect the garment industry in Kenya?
- 20) Who are key players in the line of garment business that your firm is involved in? (Suppliers, buyers, government, other producers, etc).

**The End**

## Appendix 4: Survey Questionnaire

### Garment Industry Survey 2006

#### Introduction

The garment industry plays an important role in the Kenyan industrialization process and employment creation. My name is Paul Kamau, a doctoral student at the Institute for Development Studies, University of Nairobi; I am interested in understanding operations of garment manufacturing activities in Kenya particularly after the termination of MFA. Your firm has been selected for this academic exercise and I request that you spare some time for me to ask you a few questions regarding your firm. I guarantee that the information you provide will be treated as strictly confidential and will be used for research purposes only. Neither you nor your company's name will be disclosed in any document prepared based on this survey. This questionnaire is supposed to be filled by a single factory. Thank you very much for taking time to participate in this survey.

Date \_\_\_\_\_

Names of the Interviewing team \_\_\_\_\_

Serial No / \_ / \_ / \_

#### 1. Basic information about the company

Name of the Company \_\_\_\_\_

Physical Address (Location) \_\_\_\_\_

Office: \_\_\_\_\_ Town \_\_\_\_\_

Factory: \_\_\_\_\_ Town \_\_\_\_\_

Telephone \_\_\_\_\_ Fax \_\_\_\_\_

Office: \_\_\_\_\_ Office: \_\_\_\_\_

Factory: \_\_\_\_\_ Factory: \_\_\_\_\_

E-mail: \_\_\_\_\_

Contact Person: Name \_\_\_\_\_ Designation: \_\_\_\_\_

Year of establishment in Kenya \_\_\_\_\_ (month, if it started in 2006)

Month that fiscal year (FY) starts \_\_\_\_\_

Number of employees when operation started (production) \_\_\_\_\_ (administration) \_\_\_\_\_

Does your firm operate on a special platform?  
(1) Export Processing Zones (2) Manufacturing under Bond (3) Other \_\_\_\_\_ (4)  
None

How do you describe your company?  
(1) Independent (2) Holding Company (3) Subsidiary of a domestic firm (4) Subsidiary of Foreign firm  
(5) Other (specify): \_\_\_\_\_

If Subsidiary, what is the name of the GROUP: \_\_\_\_\_

What is the legal status of your firm in Kenya?  
(1) Sole Proprietorship (2) Partnership (3) Private Limited Company (4) Public Limited company (5)  
Other (Specify): \_\_\_\_\_

## 2. Subcontracting and Outsourcing

Does your firm undertake CMT contract? (1) Yes (2) No

If YES, which firms gave you CMT contracts in 2005? \_\_\_\_\_

What kind of business services does your firm outsource?

(1) None (2) Embroidery (3) Printing (4) Design (5) Sewing (6) Transport (7) Stonewashing (8) Sand-blasting (9) Other (specify) \_\_\_\_\_

How are the following activities undertaken in your firm?

Activity	Who undertakes the activity	Proportion (%)	Amount spent in 2005 (if out-sourced) Kshs.
Sourcing of Raw Materials			
Designing			
Cutting of fabrics			
Assembly/Sewing			
Embroidery			
Printing			
Stone washing			
Sandblasting			
Laundry/washing			
Labels and price tags			
Others (specify)			

[1-within firm; 2-independent firm; 3 -the buyer; 4-Sourcing house; 5-Other (Specify)

(If more than one mention in an activity, ask about the proportions for each)

If Sewing is outsourced, name 2 firms that you give orders regularly \_\_\_\_\_

If Embroidery is outsourced, name 2 firms that you give orders regularly \_\_\_\_\_

If Design is outsourced, name 2 firms that you give orders regularly \_\_\_\_\_

## 3. Employment, Working hours and Wage level

Number of employees in 2004 (production) \_\_\_\_\_ (administration) \_\_\_\_\_

Number of employees currently (2006) working in the firm (production) \_\_\_\_\_ (administration) \_\_\_\_\_

In FY 2005 how many employees in your firm were?

i. Permanent: \_\_\_\_\_ [Male \_\_\_\_\_ Female \_\_\_\_\_]  
 ii. Casual: \_\_\_\_\_ [Male \_\_\_\_\_ Female \_\_\_\_\_]

How many workers of the following categories were in employment on average in 2005 and the average monthly salary (including allowances)?

	Designation	Number			Monthly Average Salary (Kshs.)		
		Male a	Female b	Total c	Male d	Female e	Total f
Administration Section	Managerial/Executive						
	Other Officers						
	Secretary/Clerk						
	Messenger						
Garment Section (sewing and knitting sweaters/socks)	Engineer						
	Designer						
	Quality Controller						
	Supervisor						
	Operator						
	Helper						

	Cleaners						
	Other (Specify) _____						
Other Production Sections (knitting fabrics, dyeing, and finishing)	Engineer						
	Supervisor						
	Operator						
	Helper						
	Other (Specify) _____						

How many workers have increased/decreased since FY 2004? [For those started after 2004, ask the earliest year or month and specify]

+ / - \_\_\_\_\_ persons ( )

How many days in a week does your company operate?

(1) 7 Days (2) 6 Days (3) 5 Days (4) Other [specify \_\_\_\_\_]

How many hours does your firm operate in an ordinary day? \_\_\_\_\_

How many shifts are there in a normal working day in your firm? \_\_\_\_\_

[For those with more than 8 hours]

Are the employees encouraged to work over-time? (1) Yes (2) No

If YES, what are the incentives given for working over time?

(1) Higher hourly rate than normal (2) Same hourly rate (3) Accumulated Off-days

(4) Other Specify \_\_\_\_\_

Does your firm offer any incentive payments in Wage? (1) Yes (2) No

If YES, which is the most common incentive to production workers?

(1) Piece rate (2) Attendance Bonus (3) Other (specify) \_\_\_\_\_

What percentage does each of these incentives represent in total remuneration?

- 1) Piece Rate \_\_\_\_\_ %
- 2) Attendance Bonus \_\_\_\_\_ %
- 3) Others (Specify) \_\_\_\_\_ %

By what percentage has the wage for a first-year operator changed since 2004?

+ / - \_\_\_\_\_ % [or the earliest time if started after 2004]

How does the average wage for an operator in your firm compare to the Government Minimum Wage?

(1) Higher (2) Same (3) Lower

#### 4. Skills of Workers

What percentage of total employees has Secondary Education? \_\_\_\_\_ %

What proportion of total employees has relevant professional skills?

Category	Skills Required	% with required skills
Accountant		
Human Resources/Personnel		
Garment Designer		
Quality Controller		
Production Supervisor		
Machine Operator		
Helper		

Does your company have any formal-training scheme for employees? (1) Yes (2) No.

If YES, how would you describe the training?

- 1) Formal in-house training \_\_\_\_\_
- 2) Formal outside training \_\_\_\_\_
- 3) Other (Specify) \_\_\_\_\_

How many workers were formally trained in the year 2005? \_\_\_\_\_  
 How many days/ hours did each worker get trained in 2005? \_\_\_\_\_ Days \_\_\_\_\_ Hours  
 If the training was formal-outside, where was this being obtained? \_\_\_\_\_  
 How many current supervisors were machine-operators before promotion? \_\_\_\_\_  
 How many of the current machine-operators were helpers before they were promoted? \_\_\_\_\_  
 How long does it take for a helper to be promoted to a sewing-machine-operator on average? \_\_\_\_\_ Months

How many expatriates are working in your firm? \_\_\_\_\_  
 How many expatriates are in the garment production? \_\_\_\_\_  
 In what section of garment production are these expatriates working?  
 (1) Engineering \_\_\_\_\_; (2) Designing \_\_\_\_\_; (3) Supervision \_\_\_\_\_; (4) Operators \_\_\_\_\_;  
 (5) Other [specify \_\_\_\_\_]

**5. Market**

Where did your company sell garments for FY 2005?

Type of Garments	Sold				
	To Which Country	Quantity (dozen)	Value (Kshs)	Concession	Final Selling Price

[Type of **Knit**- Garments: 01 T-shirts; 02 Other Shirts; 03 Sweaters; 04 Trousers and Slacks; 05 Ladies' Tops; 06 Dress; 07 Nightwear and Pyjama; 08 Underwear; 09 Socks; 10 Other Knit Garments  
 Type of **Woven** Garments - 11 Men's Shirts; 12 Blouses; 13 Trousers and Slacks; 14 Skirts; 15 Dress; 16 Nightwear and Pyjama; 17 Underwear; 18 Suit-type Coat; 19 Uniform; 20 Other Woven Garments [specify in the Table]

Approximately what percentage of sales was exported in FY 2005? \_\_\_\_\_ %

**Exporting Firms**

What challenges does your firm face in exporting?

a) \_\_\_\_\_  
 b) \_\_\_\_\_

When did your firm start exporting? \_\_\_\_\_

How did you find buyer(s) for your garments in the export market?  
 \_\_\_\_\_  
 \_\_\_\_\_

Which International Buyers bought your products in the FY 2005? \_\_\_\_\_  
 \_\_\_\_\_

Are there buyers who provided assistance to your firm during FY 2005? (1) Yes (2) No

If YES, what kind of assistance and by whom?  
 \_\_\_\_\_  
 \_\_\_\_\_

Did you have to change production layout to produce for export market? (1) Yes (2) No

Explain your answer: \_\_\_\_\_

Do you have business partners/associates in the countries where you export? (1) Yes (2) No

If YES, what kind of relationship do you have with these partners/associates?

\_\_\_\_\_

If NO, how do you market your products in these countries?

\_\_\_\_\_

Name THREE major buyers (companies) of your products in the FY 2005?

1) \_\_\_\_\_

2) \_\_\_\_\_

3) \_\_\_\_\_

Who are the intermediaries you have to go through before your products reach final buyer? \_\_\_\_\_

\_\_\_\_\_

What proportion of your sales in 2005 was internally designed within the firm? \_\_\_\_\_ %

Does your firm have its own Branded products (Brand Name) (1) Yes (2) No

If YES, what are the brand names \_\_\_\_\_

In the year 2005, did your firm sell garments to Branded Buyers? (1) Yes (2) No

If YES, which ones? \_\_\_\_\_

What proportion of the sale was for branded buyers? ( \_\_\_\_\_ %)

What changes did your firm undertake to meet the requirements of these branded buyers?

\_\_\_\_\_

Approximately how much did your firm spend on Research and Development in FY 2005? Kshs \_\_\_\_\_

Approximately how much did your firm spend on Marketing in FY 2005? Kshs \_\_\_\_\_

Has your firm undertaken a Market Survey in the past? (1) Yes (2) No

If YES give details: \_\_\_\_\_

How many times have you experienced delay in payment for your sales in the last three months? \_\_\_\_\_ times

How long after sale is a customer obliged to pay? \_\_\_\_\_ days

On average, how many days does it take to collect payment for your sales from the due date?  
\_\_\_\_\_ days

Does your firm use Letter-of Credit system in payments/sales? (1) Yes (2) No

**Non - Exporting Firms**

Has your firm attempted to export business before? [Only those with ZERO exports in 2005] (1) Yes (2) No  
If YES, why did you stop exporting? \_\_\_\_\_  
\_\_\_\_\_

Do you expect to return to exporting in future? (1) Yes (2) No

If 'Never Exported', are there prospects to venture into the export market in future? (1) Yes (2) No  
Explain the answer: \_\_\_\_\_

What do you think is prerequisite for a firm like yours to venture in export market?  
(1) Acquire new machinery (2) High productivity (3) More trained workers (4) Quality control  
(5) Get Buyers (6) Reduce lead-time (7) Finance (8) Other [Specify \_\_\_\_\_]

Name THREE major buyers (companies) of your products during the FY 2005?

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_

How did you find buyer(s) for your garments?  
\_\_\_\_\_  
\_\_\_\_\_

Who are the intermediaries you have to go through before your products reach final buyer? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Are there buyers who provided assistance to your firm during FY 2005? (1) Yes (2) No  
If YES, what kind of assistance and by whom?  
\_\_\_\_\_  
\_\_\_\_\_

What proportion of your sales in 2005 was internally designed within the firm? \_\_\_\_\_ %

Does your firm have its own Branded products (Brand Name) (1) Yes (2) No

If YES, what are the brand names \_\_\_\_\_

In the year 2005, did your firm sell garments to Branded Buyers? (1) Yes (2) No

If YES, which ones? \_\_\_\_\_

What proportion of the sale was for branded buyers? ( \_\_\_\_\_ %)

What changes did your firm undertake to meet the requirements of these branded buyers?  
\_\_\_\_\_  
\_\_\_\_\_

Approximately how much did your firm spend on Research and Development in 2005? Kshs \_\_\_\_\_

Approximately how much did your firm spend on Marketing in 2005? Kshs \_\_\_\_\_

Has your firm undertaken a market survey in past? (1) Yes (2) No

If YES give details: \_\_\_\_\_

How many times have you experienced delay in payment for your sales in the last three months? \_\_\_\_\_ times

How long after sale is a customer obliged to pay? \_\_\_\_\_ days  
On average, how many days does it take to collect payment for your sales from the due date?  
\_\_\_\_\_ days

## 6. Management

Who is the most influential decision-maker on business matters of your firm?

Name \_\_\_\_\_ (optional)

Age \_\_\_\_\_ (in Years)

Designation \_\_\_\_\_

Highest academic qualification of this person

- (1) Lower primary      (2) Upper primary      (3) Secondary      (4) College      (5) University  
(6) Other (Specify) \_\_\_\_\_

What was the previous occupation of this person? \_\_\_\_\_

- (1) Same company      (2) Employee in another garment firm      (3) Employee in other non-textile firm  
(4) Government officer  
(4) Other [specify \_\_\_\_\_]

How long has s/he been involved in this firm? \_\_\_\_\_ Years

How long has s/he been involved in garment industry? \_\_\_\_\_ Years

Is s/he Kenyan?      (1) Yes      (2) No

If YES, what is the ethnic group?

- (1) African      (2) Asian      (3) Other [specify \_\_\_\_\_]

If NOT a Kenyan, what is the country of origin? \_\_\_\_\_

How many people are currently the owners/shareholders of this firm? \_\_\_\_\_

Of this how many are Kenyans? \_\_\_\_\_

## 7. Capital Structure and Investment

Approximately, what was the START UP capital of this firm? Kshs \_\_\_\_\_

Approximately, what was the capital of the firm at the end of the FY 2005? Kshs. \_\_\_\_\_

What were the percentages of equity and debt of your company by the end of FY 2005? (Adds to 100%)

- (1) Equity \_\_\_\_\_%      (2) Debt \_\_\_\_\_%

What is the structure of equity in terms of?

- (1) Family \_\_\_\_\_%      (2) Other Domestic \_\_\_\_\_%      (3) Foreign \_\_\_\_\_% [country \_\_\_\_\_]

What were the sources of debt of your company in FY 2005? (Adds to 100%)

- (1) Financial institutions \_\_\_\_\_%      (2) Informal \_\_\_\_\_%      (3) Family \_\_\_\_\_%      (4) Friends \_\_\_\_\_%  
(5) Related Business \_\_\_\_\_%      (6) Other [Specify \_\_\_\_\_%]

Are the financial records of your firm audited externally on annual basis? (1) Yes      (2) No

How much investment has your firm undertaken in the last three years in Kshs?

	2003	2004	2005	Main Source
Production Equipment				
Factory Building				
Information and Communication Technology (ICT)				
Stock Investment				
Workers' Training				
Research and Development				
Marketing				
Others (specify)				

Main source: (1) Profits, (2) Own Savings, (3) Bank loan (4) Associations (5) Buyers  
 (6) Other (specify) \_\_\_\_\_

Did your firm use credit from the bank for investment in the FY 2005? (1) Yes (2) No

If YES, was it sufficient? (1) Yes (2) No

Approximately what was the percentage of bank-loans in capital during FY 2005? \_\_\_\_\_%

If NO bank credit in 2005, what is the MAIN reason?  
 (1) No Investment (2) No need to borrow (3) Unable to borrow (4) Other  
 [specify \_\_\_\_\_]

What are conditions for a firm like yours to borrow from a bank?  
 (1) Collateral (2) Referral (3) Transaction history (4) Other [Specify \_\_\_\_\_]

How easy is it for a firm like yours to get a loan from Kenyan banks?  
 (1) Extremely easy (2) Easy (3) Difficult (4) Extremely difficult

**8. Equipment and Technology**

What kind of and how many sewing/knitting machines did your company have at the end of 2005?

No.	Type	Numbers	Purchase Price (Kshs/US\$)	Operation Rate (%)	Total Replacement Value	Total Resale Value
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						

**Sewing machines:** 01=Straight lockstitch; 02=Overlock; 03=Cutting, 04=Button holes; 05=Pressing.  
 06=Others [Specify in the above table]  
**Knitting machines:** 11=Circular Knitting; 12=Flat Knitting; 13=Socks Knitting; 14=Linking.  
**Other machines:** 21=Generator, 22= Dyeing, 23=Printing, 24=Fabrics Finishing, 25=Embroidery, 26=Others (Specify in above table).

If you were to sell this business today, how much would you ask for? Kshs. \_\_\_\_\_

If you were to dispose all the machinery in your firm today, how much would you ask for? \_\_\_\_\_

What is the replacement value of all production machinery in your firm today? Kshs \_\_\_\_\_

What is the average operation rate of the production machinery in your firm? \_\_\_\_\_ %

How many computers are in your firm? \_\_\_\_\_

What are they used for?

- (1) Word processing (2) Accounts (3) Design (CAD) (4) E-mail (5) Internet search for markets  
 (6) Internet search for supplies (7) Other (specify) \_\_\_\_\_

Is your firm connected to internet services? (1) Yes (2) No

If connected, in what business areas is the internet mostly used?

- (1) Sourcing orders (2) Sourcing raw materials (3) Looking for markets  
 (4) Other [Specify \_\_\_\_\_]

Does your firm have a website? (1) Yes (2) No

If YES, what is the website link? \_\_\_\_\_

If NOT connected to internet services, how does your firm access internet services?  
 \_\_\_\_\_

Within your firm, what type of telephone is MOSTLY used for business transactions?

- (1) Fixed landline (2) Mobile (3) Both fixed and mobile (4) Other (Specify \_\_\_\_\_)

In your opinion, what is the level of information and communication technology (ICT) in your firm?

- (1) Very strong (2) Strong (3) Poor (4) Very poor

How often is ICT used to look for new markets for products of your firm?

- (1) Very Often (2) Often (3) Rarely (4) Very Rarely

## 9. Garment Production

Which production process does your company undertake?

- (1) Sewing [T-shirts, Polo-shirts, Woven shirts, Blouses, Trousers] (2) Knitting Sweaters/socks  
 (3) Embroidery (4) Knitting Fabrics (5) Other [Specify \_\_\_\_\_]

What motivated your firm to undertake this production process?  
 \_\_\_\_\_

What was the production level in the FY 2005?

[For Firms less than one year operation, ask expected production for the first year and fill in parentheses]

### Knit Garments

(FY 2005)

Type of Garments	Goods Produced		Material Used			
	Dozens	Price per Dozen	Material (yarn or fabric)	Quantity (kg or m)	Country of Origin	Price (Kshs/kg or m)

Type of Garments: 01 T-shirts; 02 Other Shirts; 03 Sweaters, 04 Trousers and Slacks, 05 Ladies' Tops, 06 Dress, 07 Nightwear and Pyjama, 08 Underwear, 09 Socks; 10 Other Knit Garments (Specify in the Table)

**Woven Garments (2005)**

Type of Garments	Goods Produced		Material Used			
	Dozens	Price per Dozens	Material (yarn or fabric)	Quantity (kg or m)	Country of Origin	Price (Ksh/kg or m)

Type of Garments: 11 Men's Shirts; 12 Blouses; 13 Trousers and Slacks; 14 Skirts; 15 Dress, 16 Nightwear and Pyjama, 17 Underwear, 18 Suit-type Coat, 19 Uniform, 20 Other Woven Garments (specify in the Table)

What percentage of the fabric was bought from suppliers located in the following countries during the period 2003-2005? [Add up to 100% for every year]

Country	2003	2004	2005	How Found?
Kenya				
South Africa				
China				
India				
Pakistan				
Sri Lanka				
Other [Specify _____]				

How main suppliers were found [Fill in the above Table]

- (1) Own efforts    (2) Buyers    (3) Internet    (4) Other businesses    (5) Friends & relatives  
 (6) Other [Specify \_\_\_\_\_]

Name TWO major suppliers of the fabric used in your firm in FY 2005

- (1) \_\_\_\_\_  
 (2) \_\_\_\_\_

If fabric was imported in FY 2005, what challenges did your firm face in the importation process?

\_\_\_\_\_

\_\_\_\_\_

In your opinion, what is quality of imported fabric compared to the local fabric?

- (1) Very Good    (2) Good    (3) Same    (4) Poor    (5) Very Poor

How are the designs of your products developed?

\_\_\_\_\_

What sewing process do you use? (1) Assembly-Line    (2) Make-Through    (3) Other (specify) \_\_\_\_\_

Has this sewing layout changed since 2004?    (1) Yes    (2) No

Explain: \_\_\_\_\_

\_\_\_\_\_

If Assembly line: No. of lines \_\_\_\_\_; No. of machines per line \_\_\_\_\_; Daily Capacity \_\_\_\_\_

How is 'Quality Control' done in your firm?

\_\_\_\_\_

What is the 'lead-time' in your firm? Export \_\_\_\_\_ days;    Domestic \_\_\_\_\_ days

How do you ensure that you meet strict delivery schedules required by the buyers? \_\_\_\_\_

\_\_\_\_\_

Are there suppliers who provided technical support in the production process in 2005? (1) Yes (2) No

If YES, what kind of support and by whom? \_\_\_\_\_

How many times have you experienced delay in fabric delivery in the last three months? \_\_\_\_\_

How long was the delay in fabric delivery on average? \_\_\_\_\_ Days

How many times have you experienced problems with quality of fabric in the last three months? \_\_\_\_\_ times

How many days did your company experience an electric power failure during working hours in the last three months? \_\_\_\_\_ days

### 10. Termination of MFA

Has the termination of MFA (quotas) affected the performance of your business?

(1) Yes (2) No

If YES, what has been the effect?

How has your company coped with the effects of MFA termination?

(1) Improvement in the quality (2) Increase productivity (3) High value products (4) Shorter lead-time  
(5) Enhanced marketing (6) Other [Specify \_\_\_\_\_]

How do you rate competition posed by producers located in the following countries 2003-2005?

	Increased	Same	Decreased	Don't Know
EAC				
South Africa				
Rest of Africa				
China				
India				
Latin America				

### 11. Business Constraints and Policy Issues

What is the main problem facing your company today? (Only ONE Response) \_\_\_\_\_

What solution(s) would you recommend in addressing this problem?

What other problems is your firm facing besides the one mentioned above (multiple response)?

How would you rate condition of the road network that your firm mainly use?

(1) Excellent (2) Good (3) Average (4) Poor (5) Extremely poor

How often does your firm use the railway line in delivery of inputs or dispatch of outputs?

(1) Very Often (2) Often (3) Average (4) Rarely (5) Very Rarely (6) Never

How are the services of railway network that serves your firm?

- (1) Excellent (2) Good (3) Average (4) Poor (5) Extremely poor

How would you rate security situation in the area where your firm is located?

- (1) Excellent (2) Good (3) Average (4) Poor (5) Extremely poor

If poor or extremely poor, how does insecurity affect your firm?

\_\_\_\_\_

\_\_\_\_\_

Approximately, what share of the total revenue does a firm like yours spend on security? \_\_\_\_\_ %

In your opinion, what should be done to assist garments manufacturing firms in accessing export markets?

\_\_\_\_\_

\_\_\_\_\_

What plans does your firm have for this business in the next 3 years?

- (1) Expand export market (2) Venture into the export market (3) Upgrade to high value products  
(4) Expand beyond garment production (5) Concentrate on domestic market (6) New export markets  
(7) Scale down production (8) Relocate (9) Close down (10) Other

[specify \_\_\_\_\_]

## 12. Business Association, Exhibitions and Trade Fairs

Is your firm a member of any business association(s)? (1) Yes (2) No

If YES, which one(s)

- a) \_\_\_\_\_  
b) \_\_\_\_\_  
c) \_\_\_\_\_  
d) \_\_\_\_\_

What are the benefits of being a member to this association(s)?

- a) \_\_\_\_\_  
b) \_\_\_\_\_

If your firm is NOT a member of a business association, what are the reasons?

- a) \_\_\_\_\_  
b) \_\_\_\_\_

Did your firm participate in any trade fair/exhibition in the FY 2005? (1) Yes (2) No

If YES how many? \_\_\_\_\_

Nature of these trade fairs/exhibitions

- (1) Kenyan exhibitions (2) External Exhibitions (3) Both domestic and external

How did you get to participate in the trade fairs/ exhibitions? \_\_\_\_\_

What was the experience of these trade fairs? \_\_\_\_\_

\_\_\_\_\_

How many new orders did you get out of this trade fairs? \_\_\_\_\_

If NO, what is the MAIN reason why your firm did not participate in trade-fair/exhibitions in 2005?

\_\_\_\_\_

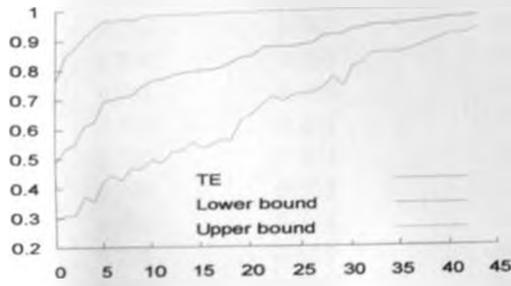
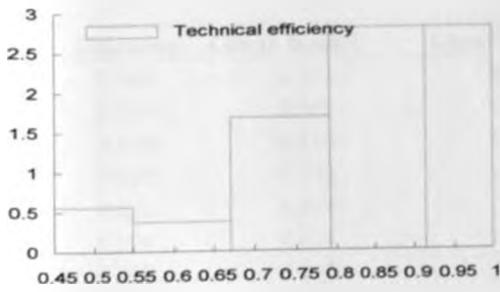
\_\_\_\_\_

**13. Flow Data for FY 2005**

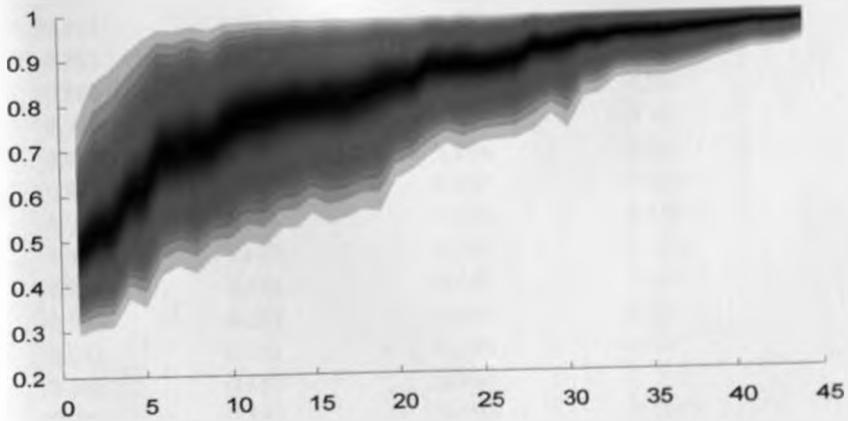
Items	Value (1000Kshs)
<b>Gross Value of Output</b>	
<b>Industrial Costs</b>	
Costs of materials (yam, fabrics, zips, etc)	
Costs of fuel and electricity (production)	
Wage and Salary for workers	
Payment to subcontracting	
<b>Non-industrial Costs</b>	
Utilities (water/telephones/waste discharge)	
Transportation	
Printing Stationery	
Insurance Payment	
Interests	
Rent	
Depreciation	
Dividend or Withdrawals	
Others	

**Once again, thank you very much for your time and useful information**

## Appendix 5: Technical Efficiency Point Estimates



Source: Own Calculations



Source: Own Calculations

## Appendix 6: Distribution of Firm Level Technical Efficiency

Firm	Efficiency	Lower Bound	Upper Bound	Width
1	0.488	0.294	0.762	0.468
2	0.534	0.308	0.851	0.543
3	0.549	0.310	0.879	0.569
4	0.612	0.372	0.916	0.544
5	0.626	0.354	0.946	0.592
6	0.696	0.424	0.969	0.545
7	0.702	0.445	0.967	0.522
8	0.710	0.427	0.975	0.548
9	0.716	0.467	0.968	0.502
10	0.746	0.465	0.982	0.518
11	0.765	0.496	0.984	0.489
12	0.769	0.486	0.986	0.501
13	0.782	0.524	0.986	0.462
14	0.790	0.525	0.988	0.463
15	0.794	0.556	0.986	0.430
16	0.798	0.535	0.989	0.454
17	0.799	0.544	0.988	0.445
18	0.808	0.562	0.989	0.427
19	0.823	0.558	0.992	0.434
20	0.840	0.629	0.991	0.362
21	0.844	0.648	0.990	0.343
22	0.872	0.678	0.994	0.316
23	0.874	0.708	0.993	0.285
24	0.875	0.691	0.994	0.302
25	0.875	0.711	0.993	0.282
26	0.881	0.716	0.993	0.278
27	0.885	0.718	0.994	0.277
28	0.910	0.735	0.997	0.262
29	0.912	0.772	0.996	0.225
30	0.915	0.739	0.997	0.258
31	0.933	0.808	0.998	0.190
32	0.933	0.817	0.997	0.180
33	0.945	0.848	0.998	0.150
34	0.946	0.853	0.998	0.145
35	0.946	0.851	0.998	0.147
36	0.946	0.852	0.998	0.146
37	0.951	0.862	0.998	0.136
38	0.954	0.873	0.998	0.125
39	0.959	0.887	0.998	0.112
40	0.962	0.898	0.998	0.100
41	0.968	0.911	0.999	0.088
42	0.968	0.913	0.999	0.086
43	0.970	0.917	0.999	0.082
44	0.975	0.932	0.999	0.067
<b>Average</b>	<b>0.831</b>	<b>0.650</b>	<b>0.978</b>	<b>0.327</b>

**Appendix 7: Pearson's Rank Correlation Matrix for Production Model**

	Value Added	Capital	Labour
Value Added	1	.784**	.658**
Capital	.784**	1	.471**
Labour	.658**	.471**	1

\*\* Correlation is significant at the 0.01 level (2-tailed)

\* Correlation is significant at the 0.05 level (2-tailed)

N Sample = 44

Source: *Own Computations from Survey Data 2006*

## Appendix 8: GATT and WTO Multilateral Trade Rounds

Name	Start	Duration	Countries	Subjects covered	Achievements
<b>Geneva</b>	April 1947	7 months	23	Tariffs	Signing of GATT, 45,000 tariff concessions affecting \$10 billion of trade
<b>Annecy</b>	April 1949	5 months	13	Tariffs	Countries exchanged some 5,000 tariff concessions
<b>Torquay</b>	September 1950	8 months	38	Tariffs	Countries exchanged some 8,700 tariff concessions, cutting the 1948 tariff levels by 25%
<b>Geneva II</b>	January 1956	5 months	26	Tariffs, admission of Japan	\$2.5 billion in tariff reductions
<b>Dillon</b>	September 1960	11 months	26	Tariffs	Tariff concessions worth \$4.9 billion of world trade
<b>Kennedy</b>	May 1964	37 months	62	Tariffs, Anti-dumping	Tariff concessions worth \$40 billion of world trade
<b>Tokyo</b>	September 1973	74 months	102	Tariffs, non-tariff measures, "framework" agreements	Tariff reductions worth more than \$300 billion dollars achieved
<b>Uruguay</b>	September 1986	87 months	123	Tariffs, non-tariff measures, rules, services, intellectual property, dispute settlement, textiles, agriculture, creation of WTO, etc	The round led to the creation of WTO, and extended the range of trade negotiations, leading to major reductions in tariffs (about 40%) and agricultural subsidies, an agreement to allow full access for textiles and clothing from developing countries, and an extension of intellectual property rights.
<b>Doha</b>	November 2001	?	141	Tariffs, non-tariff measures, agriculture, labour standards, environment, competition, investment, transparency, patents etc	The round is not yet concluded.

Source: [www.wto.org/english/thewto\\_e/](http://www.wto.org/english/thewto_e/)

## Appendix 9: Mean Differences between Pure Exporting and Local Firms

### Mean Difference in Age of the Firm

Is the firm inserted in GVC?	Mean	N	Std. Deviation	Std Error of Mean
Local Firms	25.13	24	19.04	3.89
Exporting Firms	5.40	20	3.35	0.75
Total	16.16	44	17.25	2.60
F- Statistic	20.851**			

Note: \*\* and \* signify significance at the 1 per cent and 5 per cent confidence levels respectively.

Source: Own Calculations

### Mean Difference in Size of the Firm

Is the firm inserted in GVC?	Mean	N	Std. Deviation	Std Error of Mean
Local Firms	96.46	24	79.21	16.17
Exporting Firms	917.40	20	672.83	150.45
Total	468.52	44	612.53	92.34
F- Statistic ANOVA	35.481**			

Note: \*\* and \* signify significance at the 1 per cent and 5 per cent confidence levels respectively.

Source: Own Calculations

### Mean Difference in Proportion of Female Workers in the Firm

Is the firm inserted in GVC?	Mean	N	Std. Deviation	Std Error of Mean
Local Firms	46.88	24	51.27	10.47
Exporting Firms	675.00	20	490.88	109.76
Total	332.39	44	456.04	68.75
F- Statistic	38.97**			

Note: \*\* and \* signify significance at the 1 per cent and 5 per cent confidence levels respectively.

Source: Own Calculations