

A Survey of the Extent of Vertical Integration in Asian Vegetables Exporting Businesses in Kenya

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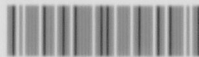
Thomas Obiero Were

A Management Research Project submitted in partial fulfillment of the requirements
for the degree of Masters of Business Administration (MBA).

University of Nairobi.

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DECLARATION

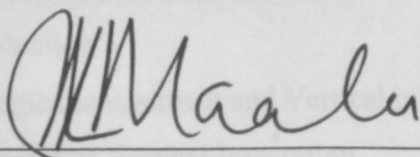
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This management project is my own original work and has not been presented for a degree in any other University.

Signed:  Date 7/11/06

Registration No: D/61/P/8594/00

This project has been submitted for examination with my approval as University supervisor.

Signed:  Date 7/11/06

Jackson Maalu

Department of Business Administration

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BMSDP

Business Services Market Development Project (DFID)

BRDC

Regional In-Situ Research Development Centre

SPSS

Statistical Package for Social Science

ST

Short Term

UK

United Kingdom

ACRONYMS AND ABBREVIATIONS

BMSDP	Business Services Market Development Project (DFID)
EU	European Market
EUREPGAP	European Retail Good Agricultural Practices
GDP	Gross Domestic Production
HCDA	Horticultural Development Authority
IFAD	International Fund for Agriculture
L/T	Long Term
RIRDC	Regional India Research Development Centre
SPSS	Statistical Package for Social Science
S/T	Short Term
UK	United Kingdom

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The Kenya horticultural sector has an annual growth rate of between 15-20% and the industry is the fastest growing agricultural sub sector in Kenya contributing close to 13% GDP. Despite the recent overall decline in growth of the Agricultural sector in Kenya, the horticultural sector has continued to show a positive performance with regard to productivity, marketing and employment. Total direct and in direct employment is about 2 million.

With the introduction of stringent quality standards by the EU which happens to be the major market, the exporters have been setting up their own farms in order to guarantee the standards. However, they still have to rely on the small-scale farmers who most often than not farm in less than an acre plot and contribute to 80% of the total horticultural produce for export. Unfortunately, the relationship between the exporters and the farmers is wanting due to; exploitation where by the farmers are offered low prices, opportunistic middlemen who encourage farmers to side-sell and inaccessibility to approved inputs as well as inadequate technical knowledge by the farmers to produce the right quality and quantity. Despite these challenges, the sector has grown due to development of innovate and sustainable vertical relationships.

This study therefore examined the different structures and vertical relationships that exist amongst the Kenya Companies exporting vegetables of Asian origin in order to explain the extent of the integration. It analyzes them and concludes by outlining the factors that influence the extent of the Integration. The research also evokes further topics for research related to this area of study.

CHAPTER ONE: INTRODUCTION

1.2 Overview of The Asian Vegetables Export Market In Kenya

1.1 Background

The Asian vegetables were introduced in Kenya in the early 1900's by the Asians who came to build the Kenya-Uganda railway line. However, Kenya started exporting the vegetables to the UK in the early 1970s when several Asians had to relocate to the UK from Uganda due to political instability. They maintained their relationships with the Kenyan Asians and Africans who had been their suppliers and they started to export the vegetables to the UK. Grant (2001) affirms that Vertical integration refers to a firm's ownership of vertically related activities and that the greater the firm's ownership and control over successive stages of the value chain for its product, the greater its degree of vertical integration; this is depicted as full, quasi or tapered integration.

Vertical integration in essence is a multidimensional concept and is characterized by four dimensions including; direction, degree of integration and forms of ownership, and breadth. The vertical integration strategy involves a set of decisions that by the nature of their scope reside at the corporate level of the organization (Hax and Majluf, 1996). These decisions are three fold in that they define the boundaries a firm should establish over its generic activities on the value chain (the question of make versus buy or fully integrate versus contract). It establishes the primary relationship of the firm with its constituencies outside its boundaries, primarily its suppliers, distributors, and customers, and identifies the circumstances under which those boundary relationships should be changed to enhance and protect the firm's competitive advantage. In the 1950's, Mpoyi (2003) points out that Vertical integration was used as a defensive strategy adopted primarily to assure a steady supply of materials.

1.2 Overview of The Asian Vegetables Export Market In Kenya

The Asian Vegetables were introduced in Kenya in the early 1900's by the Asians who came to build the Kenya-Uganda railway line. However, Kenya started exporting the vegetables to the UK in the early 1970s when several Asians had to relocate to the UK from Uganda due political instability. They maintained their relationships with the Kenyan Asians and Africans who had then started growing the crop and hence the emergence of the export trade.

Currently, the Asian vegetables from Kenya go to a niche market in the UK and it accounts for more than 10% of the vegetables exported (Minot & Ngigi, 2003). The statistics are tabulated in Annex 1. These crops have different names depending on the Asian language used. The types grown in Kenya mainly for export comprise of, chilies, Karella, Okra, Tindori, Aubegine amongst others whose common names are found in Annex 2. In the year 2003, 18% of the fresh vegetables exported were Asian vegetables; amounting to more than Kshs 16 Million.

It's highlighted in HCDA Horticultural News (2002) that the horticultural sector has annual growth rate of between 15-20% and the industry is the fastest growing agricultural sub sector in Kenya contributing close to 13% GDP. Despite recent overall decline in the economy growth in Kenya, the horticultural sector has continued to show a positive performance with regard to productivity, marketing and employment. Total direct and in direct employment is about 2 million. The sectors importance is recognized through its high value per unit land aspect, relatively labour intensive which implies a high rate of absorbing of rural workers and quick return on production factors making it suitable for small scale farming. Feldt's (2001), survey established that the Fruit and

vegetable sub-sector export market was dominated by 9 major exporters who have contracted the small scale farmers and control about 83% of the total exports. Due to the increasing global competitiveness on food safety issues such as traceability, and standards, the Exporters are keen to be in control of the production chain through working closely with these small holder farmers “who have a big quality and cost advantage in some of the labour intensive crops” (IFAD Report, 2004).

Several studies in horticulture have centred around production; such as Nyoro (1993) who looked at the production activities at different scales (large, small and medium) for different commodities and technologies and concluded that reduced support of small scale horticultural farmers by the exporter due to emergence of opportunistic buyers had limited quality, competitiveness, and efficiency in production and export. Kimani (1998) highlights Kodhek’s (1993) research on expanding Kenya horticultural production in which he sought to identify constraint to exports. Competition from other countries and the cost and availability of cargo space were identified as contributing to the slow growth of exports. Documentation hassles and corrupt officials were other disincentives in the sector.

1.3 Vertical Integration in Agribusiness

Boehlje et al (1999) highlights that the incentives for vertical integration in Agriculture range from increasing efficiency, managing risk, to response to consumers demand on quality and standards. In Agribusiness, vertical integration is characterized by large processing and marketing firms either owning farms or becoming directly involved in supporting and controlling production through contracts (Simmons, 2002). He further elaborates that the latter type of arrangement is known as Contract farming and usually involves large Agribusiness firms integrating backwards by forming alliances with groups of small-holders farmers and through written or verbal contracts provide farm inputs and extension services in return for guaranteed delivery of produce of specified quality often at a pre-determined price. (2003)

Reber (1998) outlines that vertical integration strategy includes Tapered integration, Quasi integration and Full vertical integration and that one of the worldwide ways of achieving vertical integration strategy in Agribusiness is through different modes of contract falling under quasi vertical integration. Kohls and Uhl (1985) classifies agriculture contracts within Vertical integration into three categories, Market specification contracts, Resources providing contracts, and management and income generating contracts. Wolf et al (2002) affirms that as a response to the industrialization of agriculture, vertical integration is increasingly coordinating modern agricultural supply chains. The exact form of governance structure however can vary wildly according to situation specific variables. Therefore, this study is a survey on the extent of Vertical integration in Asian Vegetable exporting Businesses in Kenya and factors that influence the extent of the integration. In the Horticulture industry, the term *Asian vegetables* refer to vegetables commonly used in Traditional Asian Cuisine or Vegetables of Oriental origin (RIRDC, 2003).

1.4 Problem Statement

Agribusiness exporting companies are faced with stringent conditions while competing in the United Kingdom (UK) markets. The exporters have to comply with international traceability standards that began being reinforced 1st of January 2005. Failure to meet the requirements results in rejection of the exports on entry in the international market. Despite Large Exporters investing considerably in vertical integration of the supply chain in-order to gain better control over the chain from input supply to export handling, the current production from these fully exporting companies owned farms is insufficient; less than 20% of the total export, implying that the export supply chain still remains heavily dependant on participation of other farmers and not only on farms owned by exporting companies IFAD Report (2004).

In Kenya, its the small-scale farmers who most often than not farm in less than an acre plot that contribute to 80% of the total horticultural produce for export, yet 44.5 % of the fresh fruit and vegetables exported is handled by not more than 9 large exporters, (BMSDP, 2002). The relationship between the two is characterized and limited by exploitation, where the farmers are offered low prices, opportunistic middlemen who encourage farmers to side-sell and inaccessibility to approved inputs and inadequate technical knowledge by the farmers to produce the right quality and quantity.

The fact that the export horticulture trade has consistently recorded an average annual growth rate of 15% - 20% (Okado, 2003) implies that the exporting companies have been able to overcome the latter challenges and meet desired stringent export quality standards through initiating innovative and sustainable vertical relationships with the small holder farmers within the supply chain.

Besides Mahaga (2003) who has done a study on vertical integration in Kenyan firms and focused on vertical integration and performance of food manufacturing firms in Nairobi, no known research study has been done on the extent of vertical integration in the Asian vegetables Export subsector.

1.5 Objectives of Study

The objective of the study was to understand the dynamics within the Asian Vegetable exporting industry with the interest of establishing the extent of vertical integration within the industry and the factors that influence the strategy.

The general objectives of this study therefore were;

- i. To establish the extent of vertical integration in the Asian Vegetable exporting Businesses in Kenya.
- ii. To identify the factors that influence the extent of the Integration.

1.6 Importance of The Study

The study could interest Policy makers to create an enabling environment that fosters mutually beneficial and effective vertical strategic relationships in agribusiness sector to assist it to grow while benefiting the small-scale farmers and thus alleviating poverty. The study could also assist the Horticultural Exporting companies in developing and implementing effective strategic relationship with the small-scale farmers. Finally the study will contribute to existing literature in Agribusiness vertical integration, and the findings may provide information for further studies.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter looks at the history of vertical integration, the underlying motives of companies pursuing this strategy and how it has been used to achieve different strategic objectives over a period of time. It highlights the multidimensional concept of Vertical integration and the controversy that emerges from trying to measure it as well as brings forth an analysis of the various forms of vertical integration namely, Full, Quasi and Tapered integration and thereafter focuses on the extent and form of ownership dimension which is the subject of this study. The chapter also refers to earlier studies attempting to measure vertical integration, discusses vertical relationships in the Japanese set-ups and concludes by discussing vertical integration in agribusiness, highlighting on its role, what it constitutes and factors influencing the choice of this strategy in agribusiness.

2.2 Strategic management and Vertical integration

Mintzberg, (1994), defines strategy "as a plan, a pattern a position and a perspective, and argues that strategy emerges over time as intentions collide with and accommodate a changing reality". Porter (1996) emphasizes that competitive strategy is "about being different," by deliberately choosing a different set of activities to deliver a unique mix of value and as such embracing a strategy as a plan and position. Accordingly, strategic management is defined by Dess, Lumpkin and Marlyn (2005) as a combination of strategy formulation and implementation which are

processes that involve adapting the organization to its business environment, and entails specifying an organization's objectives, developing policies and plans to achieve these objectives, and allocating resources so as to implement the plans. Strategies exist at several levels in any organization with the Corporate Strategy being concerned with the overall purpose and scope of the business to meet stakeholder expectations while the Business Unit Strategy focuses more on how a business competes successfully in a particular market and the Operational Strategy attention is directed towards addressing how each part of the business is organized to deliver to the corporate and business-unit level strategic direction.

At the corporate level, interest in attaining high market share naturally leads to pursuit of growth strategies, which include; horizontal integration, vertical integration, diversification, franchises, mergers and acquisitions, joint ventures, and organic growth. These strategies are often assessed by the organization given the competitive and regulatory environment they operate in and the appropriate strategy selected. Vertical integration which is the subject of this study is often selected as a strategy when it makes economical sense to utilize internal or administrative transactions other than relying on market transactions.

Vertical integration as a strategy is favored in instances where there exists major obstacles to formulation and monitoring of contracts which may be due to lack of the necessary management skills or resource, and as a result vertical integration would then ensure the quality and reliability of either the inputs or/and the distribution channels. Vertical integration may also be preferred in situations where the production quantities involved in the vertically integrated activities are of such quantities that they result in economies of scale, hence resulting in cost effectiveness and

competitive advantage. Another favoring factor relates to the number of companies in the vertically related activity, in that, the fewer companies the greater the possibility of vertical integration so as to create barriers for other firms keen to access the activity. Where there are many players in the activity the chances of locking out rivals or being locked out are low due to large number of players in these activities who could act as an alternative.

Stephen (1986) draws attention to other factors that favour vertical integration by observing that at times firms require their suppliers to invest in expensive equipments that are specialized to manufacture components that are unique to their production process, and since the parts are specific to one customer, the input production firm may be reluctant to make this investment and ask the buyer to make the investment; however the buyer may be reluctant to lock themselves up with one supplier and may instead opt for vertical integration in the particular input production process stage. Government policies and regulations that contribute to high transaction costs either in the process of acquisition of inputs and distribution of outputs may also make a firm prefer vertical integration if it lowers these transaction costs.

Porter (1996) however cautions that where the core competencies required for the new activities are significantly different, then vertical integration within that industry will be discouraged because it would take time and financial resources to build the core competencies required in the new activities and in the process, the firm may loose out to a competitor besides, since vertical integration achieves consistency in operations and as well as certainty in production, great uncertainty in demand could lead to either under utilization of the facilities, or over production, and both are costly to a firm hence uncertainty of demand is a deterrent to vertical integration.

2.3 Overview of Vertical Integration

Over the years, researchers have identified a host of motives for firms' to develop strategies that engage them in several stages of a given industry's value chain (Osegowitsch, & Madhok, 2003). The two further emphasize that these motives can broadly be split into two main categories; strategic considerations which primarily relate to power and positioning, and efficiency considerations which are primarily associated with governance and transaction cost considerations.

Strategic motives relate to the company's competitive positioning vis-a-vis rivals and potential rivals. The latter mainly refers to buyers or suppliers that might start competing with the firm. Strategic approaches aim to change the industry's existing power structure, either by building or exploiting the firm's market power or by attempting to offset the power of others. This could be achieved through several ways including; foreclosing of input and output markets to competitors, or at least raising their costs by reducing the number of suppliers/customers available to them, cross-subsidization of one stage of the value chain by another in order to 'squeeze out' more focused competitors, increasing barriers to entry by upping the stakes and reducing the threat of potential entrants, and retaining control over proprietary knowledge so as to prevent suppliers/customers from becoming competitors.

The Governance arguments are principally derived from two bodies of theory; that is the agency theory and transaction cost economics. Both seek to minimize the firm's exposure to opportunistic action on the part of others. Agency theory and transaction cost economics have different foci but share the premise that the firm's governance choice, whether it chooses to internalize or outsource

a particular activity required to create a product or service has a decisive impact on its cost efficiency. Both seek to determine the firm's most efficient transaction cost-minimizing vertical boundary (Mahoney, 1992). Joskow (1998) views that these transaction costs involve the direct cost of writing, monitoring and enforcing contingent contracts as well as the costs associated with the ex-ante investment and ex-post performance inefficiencies that may arise as a consequence of contractual hazards associated with transactions mediated through market arrangements and bureaucratic cost associated with internal organization; hence through vertical integration, a firm can minimize costs associated with transaction and agency challenges, such as; Uncertainties in demand/price, uncertainties in quality, or improve coordination between stages of the value chain and safe guard towards market failure.

However, Porter (1998) clarifies that some economies of integration could be gained by the right type of long term or even short term contracts between independent firms, and Charles and Gareth, (2001) concur and mention that there exists alternatives to vertical integration that may provide some of the same benefits with fewer drawbacks and these include strategic alliances and long-term contracting whereby the buying company and the supplying company agree to jointly seek ways of lowering cost and increasing quality of the firms inputs in; this arrangement is common among Japanese companies and their suppliers. Strategic Outsourcing is another option and has the benefits of lower input costs, better product differentiation due to supplier specialization and may free substantial company resources from non-core to core areas. Although, the company loses from the inability to learn from an activity and the opportunity to transform it into a distinctive competence

2.4 Concept of Vertical Integration

Vertical integration refers to a firm's ownership of vertically related activities. It can be viewed as the extent to which a firm controls the production of its inputs or supplies and the distribution of its outputs or finished products. (Chandler, 1962, 1990,; Williamson, 1985) in Mpoyi (2003) assert that, over the years, Vertical integration has been used to achieve different strategic objectives. When modern industrial enterprise emerged in the late 1800s, companies pursued high levels of vertical integration to realize substantial economies of scale and scope, in order to eliminate competition and to reduce market transactions cost. In the 1950s it was used as a defensive strategy, adopted primarily to assure a steady supply of materials. He further alludes to the fact that, companies tend to follow the vertical integration strategy that is dominant in their industry and secondly, industry characteristics significantly affect companies' levels of vertical integration.

Martin (1986) points out that in studies of vertical integration; measurement is the most controversial issue. Several measures of vertical integration have been proposed in the literature, but nearly all of them have been criticized. One of the reasons why there is a lack of a generally accepted measure is because vertical integration is a multidimensional concept. As such, it cannot be summarized in a single statistic without a significant loss of information.

Mahaga's (2003) study which focused on establishing the relationship between vertical integration and performance of food manufacturing firms in Nairobi defined degree of vertical integration in quantitative terms according to Stephen (1986); where Vertical integration is the ratio of value

added to sales, and concluded that food manufacturing firms that are more vertically integrated were likely to perform better.

Hax and Majluf, (1996) affirm that Vertical integration in essence is a multidimensional concept and is characterized by four dimensions including; direction, degree or extent of integration and forms of ownership, and breadth. Consequently, the choice of appropriate measure to use depends on the dimension being researched. This study focuses on the extent of integration and form of ownership dimension.

2.5 The Extent of Integration and Forms of Ownership

The greater the firms ownership and control over successive stages of the value chain for its product, the greater its degree or extent of vertical integration. The extent of integration and forms of ownership can be defined for each of the important in-puts and out-puts of a firm. The categories that describe vertical integration according to this dimension are; Full vertical integration, Quasi vertical integration and Tapered integration. A firm is considered fully integrated backwards on a given input if it satisfies all the needs for that particular input from internal sources and it's considered fully integrated forward for a given output when it's self sufficient in providing internally the demand for the product or service. Fully integrated companies have complete ownership of their assets.

The second extent and form of ownership is Tapered integration. This refers to partial integration either forwards or backwards that makes firms dependent on external sources for supply of a

portion of a given input or for the delivery of a portion of a given output. For the fraction that the firms handles internally, it can resort to either a full integration or quasi-integration mode of ownership. Taper integration results in less elevation in fixed costs than full integration, and the degree of taper can be adjusted to reflect the degree of risk in the market, so that the independent suppliers can bear the risk of fluctuations, while the in-house suppliers maintain steady production rates. Tapered integration also gives the firm access to outside Research and development activities; though Porter (1998) warns that by necessity, this strategy requires the firm to buy or sell to competitors and if this is a serious risk, then tapered integration becomes unwise to use.

companies have with their suppliers.

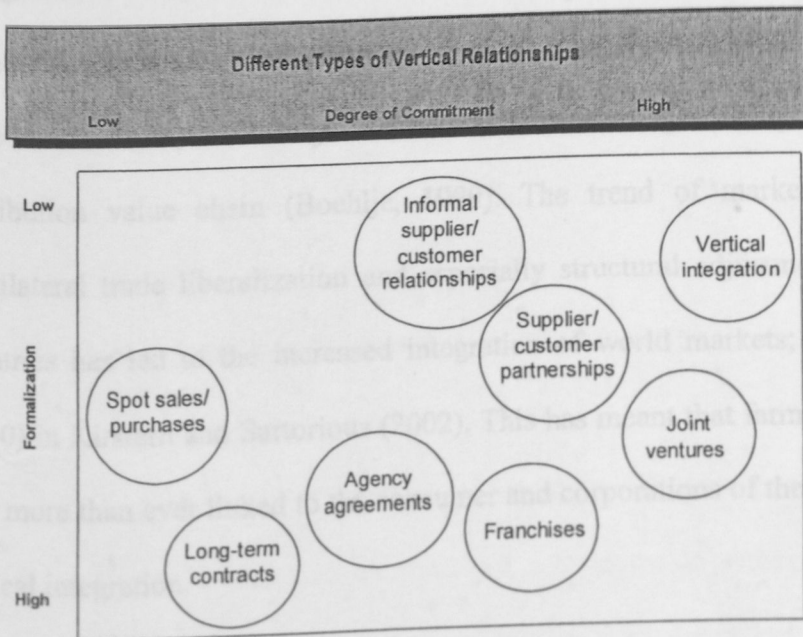
In Quasi-integration, the firm does not have full ownership of all the assets in the value chain related to given input or output. Rather they resolve to several mechanisms to assure steady relationships with the external constituencies, which reside somewhere between long-term contracts and full ownership. It creates a greater collection of interests between buyer and seller, which facilitates specialized arrangements that lower costs, reduce the risk of supply and demand interruptions, and mitigates against bargaining power. These interests normally stem from goodwill, sharing of information, more frequent and informal contacts between managements, and the direct financial stake each side has in the other. Besides, it avoids the need of full capital investment required for integration and eliminates the necessity of managing the adjacent business.

The prevalent forms of quasi integration are joint ventures, or alliances, minority equity investments, loans, loan guarantees, licensing agreements, franchises, Research and Development partnerships, and Exclusivity contracts. Reber (1998) describes quasi integration as a situation where each firm retains its separate identity but leaves one or more decisions of production and or

marketing to another other firm. Figure 1 shows the different types of vertical relationship in quasi vertical integration.

In the Japanese set-up, Samimi (1997) highlights that vertical relationships are based upon trust and mutual understanding. Such relations allow the security needed to encourage transaction specific investment, the flexibility to meet changing circumstances and trust need to avoid opportunism. Such arrangements are entirely relational contracts with no written contract at all. This model for vendor partnership has been the close collaborative relationship that many Japanese companies have with their suppliers.

Figure 1



Source: Robert M. Grant, Contemporary Strategy Analysis, Basil Blackwell, 1998 pg 325

Vertical Scope of the Firm 13
Voigt, Fall, 1998

Stewart (1993) emphasizes that Strategic choice of Breadth, and degree and form of integration will be determined by the firms' objective and range of market or environment variables unique to business and that such policy may correspondingly have to alter with change in exogenous variables. Other factors that may affect and determine extent of vertical integration include stage of development of the industry, the dynamism of the industry, structures and firms bargaining power vis a vis the both preceding and succeeding manufacturer.

2.6 Global Vertical Integration Developments in Agribusiness.

Efforts to develop the agricultural sector in developing countries are now taking place against the background of major structural change in the world agricultural industry. In many developed countries, agricultural production has changed from an industry dominated by family based small scale farms or firms to larger firms that are more tightly aligned across the production and distribution value chain (Boehlje, 1999). The trend of market oriented reforms, following multilateral trade liberalization and especially structural adjustment programmes in developing countries has led to the increased integration of world markets; points out Reardon & Barrett (2000) in Kirstern and Sartorius (2002). This has meant that farmers in the developing world are now more than ever linked to the consumer and corporations of the rich nations through aspects of vertical integration.

Kirstern and Sartorius (2002) emphasize that the globalization changes in the food and agricultural markets are driven by consumer preferences, productivity and technology, government regulations and policies have also influenced the need for higher levels of coordination resulting

into the introduction of different forms of vertical integration and alliances, which have become dominant feature in the agricultural supply chains .Wolf et al (2001) expresses that vertical coordination and contracting can be thought of as an organizational response to increased demand for quality among increasingly discerning consumers. Retailers and their up-stream suppliers seek to be innovate in order to differentiate themselves and participate in niche markets including high proceed value specialty products as premium fruits and vegetables.

Rehber (1998) argues that Vertical relationships in Agriculture are a continuously evolving process. Worldwide applications of these vertical relationships have shown that they are shaped by their own conditions and are varied from product to product. Also each country has its own experiences; and these relationships in general and in complete sense are found in agriculture everywhere in extremely heterogeneous forms. Despite the heterogeneous forms, all the Agribusiness Exporters strive to comply with the stringent tracesability and EUREP-GAP Standards.

2.7 Factors Influencing Vertical Integration Strategies in Agribusinesses

Grant (1998) up-holds that the choice of vertical arrangements with external supplier / buyers, whether spot market, long-term contracts or some form of strategic alliance critically depend on firms competitive strategy and its perception of its core competencies; its therefore possible to see different vertical arrangements among firms within the same industry, and within the same company different vertical relationship are likely in different activities.

Generally factors that influence vertical integration include managing and allocating risks, improving efficiency and responding to consumers.

Risk has been a characteristic of the agricultural sector and strategies to reduce risk have significant structure and coordination implications Eaton and Shepherd (2001). One risk is that of prices of inputs or products. A common strategy used to reduce the risk of high prices for in-puts is by contracting for supplies. A related strategy is to reduce the price risk exposure on products by contracting product sales. Some companies reduce price risks by vertically integrating into the input supply or product distribution channels. These coordination methods attempt to reduce the impact of market fluctuations that are part of the open spot market pricing system. A second source of risk is related to quantity and or quality features. Tighter coordination may be required to obtain particular quality characteristics, which may not be available in predictable quantities in open spot markets. The coordination needs to ensure both quality and quantity for efficient operations and this may be better achieved through contracts, ownership of more than one stage, joint ventures or other similar arrangements in the food production and distribution chain.

High fixed costs at all stages of agricultural production and distribution provide a strong incentive to stabilized volume processed. Flow scheduling and capacity utilization are essential to cost control. Plants and animals bred or engineered for specific end uses also require production practices tuned to the specific end use. Conformance to specific quality standards may be accomplished at lower cost with a contract or integrated system compared to a market coordinated system. Compliance with regulations on the use of drugs and chemicals also requires a greater degree of coordination of activities at more than one level of the food system; Wolf et al (2001).

On the other hand, one of the prime arguments for vertical integration is the reward from responding to increased specificity in consumer demand. Richer consumers are more demanding consumers. They expect quality control and products with specific characteristics to be available when desired. Some attributes may be achieved during processing while some are achieved at the production stage. Boehlje et al (1999) sums it up by pointing out that the process of vertical integration is driven by focusing on cost reduction, then risk reduction and finally on consumer responsiveness. This are also the views of Key and Runsten (1998) whose research in Latin America pointed out that market imperfection and transaction costs influenced the extent of vertical integration among the Agribusiness firms.

2.8 Contract Farming In Vertical Integration Strategies

Agribusiness can use a number of methods to obtain raw material. At one extreme they rely on spot markets for supply by purchasing the commodities at the going market rates. At the other extreme they can fully vertically integrate and develop estate operations where their product is produced by the firm with hired labour. Contract farming represents an intermediate institutional arrangement between the two that allows firms to control certain elements of production without owning the means of production (Patrick, 2004); thus a genre of Quasi- vertical integration.

Wolf et al (2001) explains that a contract between farmer and intermediary might take the form of detailed written agreement that specifies many aspects of farmer responsibilities, including how a particular crop should be grown. However, coordination also might occur through a less formal type of contract that derives its structure according to professional norms such as local conventions

and is enforceable through reputation and repeated interactions. Local arrangements, which involve trust, reputation effect, professional norms, and tacit understandings, are also concrete mechanisms that ensure compliance.

A study on contracts between farmers and intermediaries carried out by Wolf et al (2001) identified three functions of contracts among the fruits and vegetable farmers in California; they include, coordinating production by allowing people to allocate resources with greater confidence, providing incentives (penalties) to induce particular behaviors and allowing farmers and intermediaries to share risk. These functions are implemented via four policing instruments; namely, in-input control, monitoring, quality measurements and revenue sharing.

2.9 Types of Contract Farming

Agribusiness firms have often had to continuously evaluate the option of having to own land and grow their own raw material, or source raw material from contracted farmers, or from open/spot markets. The emergence of contract farming usually depends on the existence of one or more of the following conditions, high value specialty crop with a lucrative niche markets, need for consistent reliable supplies on the part of the buyer or supplier, a system of in-input and output markets that cannot be met through open market purchases, or labour intensive commodity that small holder farmer can produce efficiently (Little, 2000).

The types of contract used depend on a number of factors such as the nature of the product, the primary processing required if any and the demands of the market in terms of supply reliability.

The nature of the agreement is also influenced by quality, incentives payment arrangements, the level of control the sponsors want to have over the production process and the extent to which parties have their capital tied up in the contract. They may need to specify issues such as contract duration, quality standards, production quota, cultivation practices, and crop delivery arrangements, pricing arrangements, payment procedures and insurance arrangements.

Pricing arrangement options include: fixed prices at the beginning of each season, flexible prices based on world and local market prices, spot market prices, consignment basis prices which imply that the payment to the farmer is not known until the raw or processed product has been sold and split pricing where the farmer receives an agreed base price together with the final price when the sponsor has sold the product Eaton and Shepherd (2001). Omosa (2001) study on French beans exporters in Timau identified that the period of Engagement also influenced the nature of the contracts among the exporters and farmers.

Khols and Uhl (1985) have classified contracts into 3 broad categories. These are, market specification contracts, resource providing contracts, and management and income Guarantee contracts. The market specification contracts specify some of the product quality measures, which will be acceptable to the integrator, and also some regulations are placed on the price and method of payment. Contracts are generally signed at planting time and specify how much the integrator will buy and at what price. Little or none of the farmers' management decisions are transferred. From the producer viewpoint, they guarantee a buyer if specifications are met.

In Resource providing contracts, the integrators provide production resources with certain conditions and managerial help and supervision. Product prices are usually based upon spot

markets and income guarantees to the producers are minimal. The Management and income Guarantee contracts often include the production and marketing stipulations of the former two. In addition market and price risks are transferred from farmers to integrators in this type. On the other hand the integrator takes substantial part of the managerial responsibility of farmers. the Land ownership and land tenure contracts is an extension of management and income specification contracts with additional causes related to land tenure, this occurs where firms or government agencies lease land to farmers for contract farming.

2.10 Contract Farming and The Agribusinesses Environment

Eaton and Shepherd (2001) outline the following as preconditions for successful contract farming; Profitable markets for the crop, Supportive Physical and Social Environments, as well as Government support. In terms of profitability of the crop, it's expected that the Agribusiness should have a market for the planned production and that it can be supplied profitability on a long-term basis. The physical environment must also be appropriate in general and in particular for the different products to be produced. Thus the infrastructure such as utilities, and communications should be suitable and land should be availability and tenure system favourable; while the Government should provide an enabling and regulatory environment through existence of suitable laws of contract and other laws required, as well as provide services such as research and at times extension services.

Simmons (2003) concurs as he highlights that the success of contracts reflects good contracting environment and management practices. The contracting environment being strength of markets

for contracted out-put, government macro policies, technical sophistication in production and attenuation of land ownership while important management elements are farm groups, selection of participants for contracts, managing contract default and conflict resolution.

3.1 Research Design

This research undertook a cross-sectional survey. This enabled the collection and subsequent analysis of data for a given point in time. Babbie (1973) acknowledges that Cross Sectional surveys can be used to determine relationship between factors. Thus detailed analysis of data from the cross-sectional survey provided an understanding of the current extent of vertical integration as well as establish factors that influence extent of vertical integration. A similar research design was adopted by Chirar (1998) in his study of business environment on food manufacturing firms in Nairobi.

3.2 The Population

The population of interest comprised all the Asian vegetables exporting business in Kenya. The Kenyan law demands that all Horticulture exporters have to register with the HCDA which ensures only quality produce is exported. Accordingly, the list of the exporting companies obtained from HCDA was exhaustive and was used to identify the companies to interview. The research aimed at interviewing all the 70 companies listed.

CHAPTER THREE: RESEARCH METHODOLOGY

3.3 Data Collection

3.1 Research Design

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3.3 Data Collection

4.1 Introduction

Data was collected through structured questionnaire by research assistants who interviewed the relevant personnel in the companies. The questionnaires had 3 sections. Section A obtained information on the General Business Information; section B obtained information on the Extent of Vertical integration in the Asian Vegetables Exporting Business and section C asked questions aimed at identifying the factors that are perceived to influence the extent of Vertical Integration.

3.4 Data Analysis

The research was to establish the extent of Vertical Integration among exporters by identifying the Data was coded and Statistical Package for Social Science (SPSS) used to analyze the findings. Descriptive statistics; including Proportions, and frequencies tables were used to determine and analyze the extent of vertical integration. In identify the underlying factors that influence the extent of the integration, factor analysis was used. It assisted in selecting a subset of variables from the larger set, based on which original variables having the highest correlations with the principal component factors were selected and discussed.

CHAPTER FOUR: ANALYSIS AND FINDINGS AND DISCUSSIONS

4.1 Introduction

A total of 41 Asian vegetables exporting companies were interviewed during the research. The snow ball data collection technique was used in identifying the companies, which were then visited by the research assistants who interviewed the managers. Analysis of trends from HCDA showed that in the last 5 years, an average of 60 to 70 companies were involved in the Asian vegetables export Business per year; that leads to a response rate of above 55%.

Number of companies with the respective farmhand employees.	Percentage of all the companies interviewed.
100	100

The research was to establish the extent of Vertical integration among exporters by identifying the companies' level of control over successive stages of the value chain. Their levels of control ranged from sourcing produce from farms fully owned by the exporters on one end referred to as fully integrated; to Spot markets which involved buying from an open market when needed, in this case having the least control over the production process. In between exists tapered integration where the relationships such as long-term and short-term contracts, are used by companies in order to top up on quantities produced from their own farms so as to fulfill orders. Some of the exporting companies partially invest in the farms they are sourcing from resulting into quasi-integration. It's possible for a company to be involved in all the three extents of vertical integration in different magnitudes. The study also researched on the factors that greatly influence the extent of vertical relationship among the interviewed companies'. This was done amongst the known generic factors that influence vertical integration.

4.2 Profile of the Companies

4.2.1. Nature of the Asian vegetable companies interviewed

Stigler (1951) linked the incentives of vertical integration to mechanisms that develop as an industry matures and its end market demand grows; thus the age and size of business have influence on the decision to pursue vertical integration. The size of the company was established by determining the number of permanent employees (Table 4.1).

Table 4.1: Permanent Employee distribution among the Companies

Number of Employees	Number of companies with the respective Permanent employees.	Percentage of all the companies interviewed.
0 to 10 employees	25	61.0
11 to 15 employees	6	14.6
16 to 20 employees	3	7.3
Over 20 employees	7	17.1
Total	41	100.0

The (Table 4.1) demonstrates that 61% of the companies had 10 or less non-casual employees'.

Consequently the prevalence of small companies indicates that the extent of vertical integration in the interviewed companies is low.

4.2.2. Source of produce

The different stages in a product value chain may be located at different physical locations; the further apart they are the greater the challenge for a business to adopt vertical integration strategy because of complexity of logistics that may be involved there in.

The study therefore inquired about the geographical spread of the stages of the value chain by asking the regions where the companies sourced their produce since most of the exporting companies are found in Nairobi, where relevant facilities and infrastructure such as cold storage and the airport are found. The findings are illustrated in (Table 4.2).

Table 4.2: Sources of Produce

Regional sources of produce	number of companies sourcing from the respective regions	Percentage of the total companies interviewed
Eastern Kenya	35	85.4
Central Kenya	27	65.9
Other parts of Kenya	18	44.0

It's not surprising that majority of the exporters source the Asian Vegetables from several regions that are near Nairobi including Eastern Kenya which is the most popular source with 85.4%, followed by Central Kenya with 65.9%. The proximity is strategically important in controlling whatever goes on the farms hence potential for vertical integration while diversification of sourcing locations spreads the risk by ensuring availability of produce incase there is crop failure in one region due the agricultural produce vulnerability to weather and diseases.

4.2.3. *Market destinations for the Asian vegetables.*

Understanding the consumers of a product enables enterprises make relevant strategic decisions to ensure all the product features meet the desirable standards of the market. During the survey, the customers were classified into regions and the companies asked to state which regions they targeted and sold their produce (Table 4.3).

Table 4.3: Destination Market for Asian vegetables

Destination markets	Number of companies supplying respective destination Market	Percentage of the total number of companies' interviewed.
Local / national Markets	21	51.2
East Africa / Regional	3	7.3
Other parts of Africa	1	1.0
EU markets	40	97.6
Middle East Asia	30	73.2
America	2	4.9

As exhibited in (Table 4.3), 51.2 % of the businesses sold to the local Market, 97.6% target the export market, categorically emphasizing that the Asian vegetables are produced more for the export market rather than the local. It was identified that what gets into the local market was 3rd and 4th grade while the 1st grade and 2nd grade made it to the international markets which though competitive, offered higher prices. Though the Asian vegetables are often grown for niche market that draws a premium price, they are meant to meet stringent EU standards by passing the EUREPGAP requirements which require controlling the process right from the on set of production. The high percentage that ends –up in the EU market (Table 4.3) depict that there exist vertical relationship that enable the exporting companies to be in control of the quality right from production so as to meet the stringent EU standards.

4.2.4. *Nature of the company Strategies*

Vertical integration involves heavy investments of resources, and refined coordination of activities thus a good strategy is paramount if the business is to flourish since a Strategy acts as a road map to a business. The companies were asked whether they had a written down strategy, that was shared and whether all the employees were in involved in developing it. The answers were scored

on the scale that ranged from highly formalized to vaguely formalized, with the highly formalized being ideal (Table 4.4)

Table 4.4: Nature of the company Strategies

Nature of Strategy	Number of companies using the respective strategies.	Percentage of the total number of companies interviewed.
Highly formalized	17	41.4
Fairly formalized	20	48.8
Some what formalized	4	9.8
Vaguely formalized	0	0.0
Non formalized	0	0.0
Total	41	100.00

90% of the companies interviewed (Table 4.4) had formalized strategies which is consistent with the young age and small size of most of the companies and hence the reliance on vertical relationships through subcontracting of small scale farmers (Table 4.7)

4.2.5. *Level of dynamism in Asian Vegetables Exports business*

Among the factors that initiate the impetus for companies to go for vertical integration is the potential power for the suppliers and buyers who may create uncertainty leading to high levels of dynamism in the industry, and therefore to counter this, the companies may desire to gain greater control of the value chain through vertical integration. The study gauged the level of dynamism by asking questions about observations that depicted dynamisms such as high frequency of entry and exit in the industry, the fluctuation of prices, and sensitivity of the international market to the products (Table 4.5)

Table 4.5: Perceived Level of dynamism

Level of dynamism	Number of companies perceived level of respective dynamism	Percentage of the total number of companies interviewed.
Extremely dynamic	19	46.3
Very dynamic	10	24.4
Fairly dynamic	8	19.5
Averagely dynamic	3	7.3
Not dynamic /static	1	2.4
Total	41	100.0

The study established that more than 29 companies which is 70% of the companies interviewed viewed the Asian vegetable export market as being very dynamic and this could be contributing to the young age and small size of most of the companies and hence the reliance on vertical relationships through subcontracting of small scale farmers (Table 4.7).

4.2.6. *Areas of competency*

Different kind of expertise is valuable at diverse stages of the value chain given the varied parameters that dictate operations at each stage. Therefore, emphasis on competency in a particular stage gives an insight on the business strategy; for that reason, businesses were asked to identify their areas of competency, amongst Production, Grading Processing and Packaging, Transportation and Consolidation of orders (Table 4.6).

Table 4.6: Competency areas

Area of competency	Number of companies mentioning respective areas of competency	Percentage of the total number of companies interviewed.
Production	19	48.8
Grading, processing & Packaging	19	48.8
Specialized Transportation from farms	0	0.0
Consolidation of orders	3	7.3
Total	41	100.0

Both Production and Grading, Processing and Packaging scored the highest at 48.8% (Table 4.6).

This demonstrates that the exporting companies do not want to compromise on quality and standards; a major competitive factor in the global horticulture market. However since majority of the companies use spot markets and subcontracting in sourcing their produce (Table 4.7), it means that the dominance of the Production competence is achieved through provision of extension services; a backward vertical relationship

Table 4.7: Vertical strategic relationships in Asian vegetable export business.

Vertical Strategic relationships	Number of Companies practicing the particular vertical relationship	Percentage of all the companies interviewed.
Own farms only	4	9.8
Spot markets only	8	19.5
Spot + Own farms only	4	9.8
Short term contract + Spot markets	16	39.0
Short term contract + own farms	2	4.9
Short term contract + own farms + Spot	5	12.2
S/T&L/T contract + own farms	1	2.4
C/T contract + Spot Market + own farms	1	2.4
Total	41	100

4.3 Extent of the Vertical Integration

The study aimed at determining the extent of Vertical integration through establishing, the nature of the strategic relationships within the Asian vegetables export businesses as well as the relationships features such as basis of agreement and price fixation mechanism within the value chain in order to provide insight into the level of control of the exporting companies.

4.3.1 Strategic vertical relationships.

Strategic vertical relationships exist in various forms ranging from full vertical integration to other forms of relationship that depict the extent of vertical integration. These relationships include contracts, spot markets, joint ventures franchises; that are incorporated under quasi and tapered integration. The companies were therefore asked to state which kind of relationships they were involved in while sourcing the produce.

Table 4.7: Vertical Strategic relationships in Asian vegetable export business.

Vertical Strategic relationships	Number of Companies practicing the particular vertical relationship	Percentage of all the companies interviewed.
Own farms only	4	9.8
Spot markets only	8	19.5
Spot + Own farms only	4	9.8
Short term contract + Spot markets	16	39.0
Short term contract + own farms	2	4.9
Short term contract + own farms +Spot	5	12.2
S/T&L/T contract+ own Farm	1	2.4
L/T contract+ Spot Market + own Farm	1	2.4
Total	41	100

There are 29 companies which is 71% of the total exporting companies (Table 4.7) depend on more than one vertical relationship to fulfill their orders. The most popular combination is Spot market and Short-term contracts at 39%. Spot markets comprised of exporting business buying from brokers, non-contracted farmers, and majority being from other competing Asian vegetables exporting companies who may be willing to sell to another exporting company due to excess production or mismatch of demand and production timings as a result of inconsistent weather patterns, or at times not being able to raise volumes that would make economical sense to export. Only 9.8% sourced exclusively from their own farms. This is consistent with IFAD Report (2004) findings that established that the unit cost of production for farms fully owned by exporters was higher and that they prefer sourcing from contracted farmers

4.3.2 Quasi Integration in Asian Vegetable Export Business.

Firms involved in Quasi- integration, do not have full ownership of all the assets in the value chain related to given input or output. Rather, they resolve to several mechanisms to assure steady relationships with the external constituencies, which reside somewhere between long-term contracts and full ownership. Reber (1998) describes quasi integration as a situation where each firm retains its separate identity but leaves one or more decisions of production and or marketing to another other firm.

The (Table 4.8) below shows that a total of 25 companies which is 61% of the businesses were involved in quasi integration through contract farming to ensure steady relationships with the external constituencies.

Table 4.8: Quasi Integration relationship in Asian vegetable export business

Quasi Integration relationship	Number of Companies practicing the particular vertical relationship	Percentage of all the companies interviewed.
Short term contract + Spot markets	16	39.0
Short term contract + own farms	2	4.9
Short term contract + own farms +Spot	5	12.3
S/T&L/T contract+ own Farm	1	2.4
L/T contract+ Spot Market + own Farm	1	2.4
Non Quasi integration business	16	39.0
Total	41	100.0

4.3.3 *Tapered Integration in Asian Vegetable Export Business.*

This is partial integration either forwards or backwards that makes firms dependent on external sources for supply of a portion of a given input or for the delivery of a portion of a given output. In this case, the exporters practicing such have own farms (Table 4.9).

Table 4.9. Tapered integration relationship in Asian vegetable export business

Tapered integration relationship	Number of Companies practicing the particular vertical relationship	Percentage of all the companies interviewed.
Spot + Own farms only	4	9.8
Short term contract + own farms	2	4.9
Short term contract + own farms +Spot	5	12.2
S/T&L/T contract+ own Farm	1	2.4
L/T contract+ Spot Market + own Farm	1	2.4
Businesses not practicing Tapered Integration	28	68.3
Total	41	100.0

A total of 13 companies which is 31.7% of the businesses as demonstrated in (Table 4.9) were Taper integrated. Besides having their own farms, the businesses partially depended on external sources for supply of the produce.

4.3.4. *Nature of the contracts and Base of Agreement*

Contract farming represents an intermediate institutional arrangement between the full vertical integration and spot markets that allows firms to control certain elements of production without owning the means of production (Patrick, 2004); thus a genre of Quasi- vertical integration. 63 %, of all the interviewed business were involved in contractual relationship. The companies use both written and non-written contracts, with written contracts being prevalent at 85% of the companies. A further analysis on what entailed in the strategic relationship was done for companies involved in contractual relationship (Table 4.10).

Table 4.10: Provisions in the Contracts

Services provided	Number of Companies providing the service	Percentage of all the companies interviewed
Ascertainment of market	26	63.4
Provision of market information	17	41.5
Provision of technology and Equipment	14	34.1
Provision of farm in-puts	12	29.3
Training	10	24.4
Provision of extension services	28	68.3
Setting up and managing collection centre	18	44.0
Others	3	7.3

It emerged that the companies provided a combination of services and of the listed services, extension services topped the list with 68.3% (Table 4.10) followed by ascertainment of market that was 63.4%. The dominance of extension services is to ensure quality product from the on-set of production.

4.3.5. *Base of Agreement and Reinforcement mechanisms of the contracts.*

Side selling of agric-produce is a common phenomenon among contracted farmers. Side selling involves a contracted farmer selling to a buyer who they do not have a contract with; consequently leading to the farmers not being able to meet their part of the bargain in terms of quantity with the contracted buyer. At times the farmers may buy from other non-contracted farmers and offer them as their own so as to meet the quantities and this affects the quality because the non-contracted farmers do not entirely have to adhere to the standards of the international market. The study therefore seek to find out how these opportunistic tendencies within the value chain were managed (Table 4.11), and how they were reinforced (Table 4.12).

Table 4.11: Basis of agreements between the Farmers and the exporting Business

Basis of agreements	Number of companies using the respective basis of agreement	Percentage of all the companies interviewed
Legal	6	14.6
Trust	16	39.0
Reputation	4	9.8
Professional norms	9	22.0
Tacit understanding	16	39.0
Others	5	12.2

The findings of the study show that these opportunistic tendencies within the chain are managed through Trust and Tacit understanding between the two parties as depicted in (Table 4.11) at 39.0%.

Table 4.12: Analysis of the processes of reinforcing contracts.

Process of reinforcing contracts	Number of companies using the respective basis of agreement	Percentage of all the companies interviewed
Legal measures	9	22.0
Cutting of inputs	19	46.3
Refusing to buy subsequent seasons	14	34.2
Others	7	17.1

The most popular method of reinforcing contracts at 46.3% was through cutting off inputs and refusing to buy in the subsequent season was second at 34.2%. Only 22.0% resorted to legal measures. The policy regulators in this area; the HCDA have not been able to reinforce the contracts and the horticultural companies find it a waste of time following lengthy legal process and thus revert to other mechanisms such as cutting of inputs and refusing to buy subsequent seasons.

4.4.1. Analysis of the factors

These findings on the base of agreement and reinforcement mechanisms of the contracts are similar to those observed in the Japanese set-up; Samimi (1997) highlights that vertical relationships in Japanese set-up are based upon trust and mutual understanding and that these relations allow the security needed to encourage transaction specific investment, the flexibility to meet changing circumstances and trust need to avoid opportunism. Such arrangements are entirely relational contracts with no written contract at all.

4.4 Factors Influencing Extent of Vertical Integration.

Factors unique to a particular industry do influence the extent of vertical integration, namely ; quasi, tapered and full vertical integration. Among the companies interviewed, Quasi-integration emerged as the predominant of integration at 61% (Table 4.8) followed by tapered integration at 31.7% (Table 4.10).

The study went further to identify the factors that greatly influence the existence of these relationships from the known factors found in the literature that stimulate the vertical integration; which include managing and allocating risks, improving efficiency, responding to consumers, cost savings , controlling of supplies (inputs) in terms of quality and quantity amongst other factors. A Descriptive analysis and factor analysis were used to analyze the findings of the rankings by the companies. The companies were requested to rank these factors from Most important (5) to comparatively less (1).

4.4.1. *Analysis of the factors*

A descriptive analysis of these factors shows that cost savings has the highest mean of 4.00 (Table 4.13) and therefore the most important factor in influencing the integration structure. This is closely followed by certainty of quality at a mean of 3.95 (Table 4.13)

Table 4.13: Mean and standard deviation of the factors.

	N	Minimum	Maximum	Mean	Std. Deviation
Control of supplies	41	1	5	3.46	1.05
Cost savings	41	1	5	4.00	1.16
Response to consumer needs	41	1	5	3.39	1.36
Efficient resource utilization	41	1	5	2.80	1.17
Spreading risk	41	1	4	1.44	.81
Timely supply	41	1	5	3.56	1.32
Certainty of quality	41	1	5	3.95	1.16
Assurance of supply	41	1	5	2.78	1.33
Certainty of quantity	41	1	5	2.56	1.18
Speed of delivery	41	1	5	2.20	1.35
Valid N (listwise)	41				

This is in league with the IFAD report findings that “most agribusiness rely on contracting small-scale farmers who have a big quality and cost advantage in some of the labour intensive crops” (IFAD Report, 2004).

4.4.2. *Analysis of the perceived factors that influence the extent of Integration.*

Correlation matrix (Appendix 3) of the identified variables depicts 4 sets of highly inter-correlated variables. These sets include; Timely supply, Certainty of quality, and Certainty of quantity. Assurance of supply and Speed of delivery. Control of supplies, Response to consumer needs and Efficient resource utilization. And finally Cost savings, Response to consumer needs, and Spreading risk. A factor analysis of these variables presents the following findings which are consistent with the observations made from the correlation matrix and concretize the nature of these factors.

Table 4.14: Table of Communalities among the factors.

	Initial	Extraction
Timely supply	1.000	0.631
Certainty of quality	1.000	0.586
Assurance of supply	1.000	0.856
Certainty of quantity	1.000	0.565
Speed of delivery	1.000	0.511
Control of supplies	1.000	0.673
Cost savings	1.000	0.709
Response to consumer needs	1.000	0.853
Efficient resource utilization	1.000	0.771
Spreading risk	1.000	0.498

The extracted communalities are high with majority being above 0.6 and therefore it's worthy mentioning that the retained factors in the analysis are able to explain a large proportion of each of the variables and therefore it's meaningful to use factor analysis in the analysis of this data (Field 2000).

According to the Guttman – Kaiser rule in (Field 2000), if a factor has a low Eigenvalue, then it is contributing little to the explanation of variances in the variables and may be ignored as redundant; only factors with Eigenvalue larger than 1 are to be retained, and these factors should be accounting for about 70% or more of the total variance for the analysis to be conclusive. In this analysis, 4 factors exhibit features as exemplified by the (Table 4.15) below.

Table 4.15: Eigen values of the factors.

Component	Initial Eigen values		
	Total	% of Variance	Cumulative %
1	2.141	21.413	21.413
2	1.675	16.753	38.166
3	1.522	15.217	53.383
4	1.516	15.155	68.538
5	.910	9.099	77.637
6	.830	8.297	85.934
7	.790	7.908	93.842
8	.583	5.828	99.673
9	2.396E-02	.240	99.912
10	8.776E-03	8.776E-02	100.000

Extraction Method: Principal Component Analysis.

Hence, a further examination was done by analyzing the rotated component matrix (Table 4.16) which loaded the variables to the 4 factors (components) earlier identified. All absolute values less than 0.5 were suppressed because the sample size was not very big (Field 2000), and also to allow easier scanning and interpretation of the loadings.

The first of the four factors identified in the (Table 4.16) that influence the structure of the relationship and hence extent of integration relates more to product specifications since it's loaded with, certainty of quality, and quantity. The second factor relates to contractual contents which include timely supply, assurance of supply and speed of delivery.

The third factor revolves around financial aspects because it's loaded to Cost savings and Response to consumer needs who are sensitive to prices. The fourth Factor relates to ability to control the relationship since it's loaded with control of supplies/inputs and efficient resource utilization.

5.1 Introduction

Table 4.16: Rotated Component Matrix

	Component			
	1	2	3	4
Timely supply		-.758		
Certainty of quality	.703			
Assurance of supply		.854		
Certainty of quantity	.694			
Speed of delivery		-.687		
Control of supplies				.757
Cost savings			.676	
Response to consumer needs			-.880	
Efficient resource utilization				-.753

Therefore the four underlying factors that influence the extent of the vertical integration are; the ability of the relationship to meet the Product specification as required by the market, the appropriateness of the Contractual contents and ability to follow them through in delivery of the product; the ability of the relationship to manage Financial expectations of both the exporting companies and the consumers, and also the ability of the relationship to allow the exporting companies to control their association with the contracted farmers.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.

5.1 Introduction

The chapter gives an overview of the nature of the Companies interviewed and goes further to address the two objectives of the study by summarizing and drawing conclusion from data analyzed using proportions, frequencies and factor analysis technique. Majority of the companies were identified to have more than one form of vertical relationship with the prevalent extent of vertical integration being Quasi-integration. Inference is made on the four factors that were identified to influence the extent of vertical integration. The chapter also highlights current policy shortcomings and the limitations of the study, as well as makes recommendation on other areas of study.

5.2 Summary and Conclusion

61% of the companies interviewed had 10 or less non-casual employees' implying that a majority of firms in the Asian Vegetables export business are small-scale in nature, and rely on casuals because of seasonality of crops and also in order to cut down overhead costs. Eastern Kenya is the most popular source for the produce with 85.4%, followed by Central Kenya with 65.9%. Besides having favorable weather, the proximity to the International Airport and access to other relevant infrastructure such as cooling facilities for perishable goods place Eastern Kenya and Central Kenya in advantageous positions as a source of perishable produce for the export market. 97.6% of

the businesses target the export market, while only 51.2% sell into the local market making it an export market oriented business, with only 3rd and 4th grade produce getting into the local market.

The first objective of this study is addressed using the definition articulated by (Chandler, 1962, 1990,; Williamson, 1985) in Mpoyi (2003) that Vertical integration refers to a firm's ownership of vertically related activities and that it can be viewed in terms of the level of which a firm controls the production of its inputs or supplies and the distribution of its outputs or finished products. They further clarify the extent of vertical integration to include the three categories namely; Full vertical integration, Quasi-Vertical Integration and Tapered Integration. Among the companies studied, 10% were fully integrated and were therefore sourcing from their own farms, packing and then exporting. 61% were Quasi-integrated and resorted to several mechanisms to assure steady relationships with the external constituencies, and 31.7% were Taper integrated, where the businesses partially depended on external sources for supply of the produce.

The prevalent quasi-integration at 61% involved contracting small scale farmers, however, it emerged that more than 70% of the companies interviewed relied on more than one vertical relationship. The most popular was the combination of contract farming and purchasing from spot market. The Contracting of the small scale farmers encompassed provision of extension services by the business, who considered their competency to be in production and grading as well as packaging and grading at 48.8%. They assist the farmers to put up sorting houses and invest in Equipments such as sprayers which are used by the farmers. The Businesses use both written and verbal contracts to manage their relationship with contracted farmers; with written contracts being prevalent at 85%. However, the relationship is to a great extent based on Trust and Tacit understanding, with the businesses reinforcing the contracts through cutting off inputs and Refusing to buy in the

subsequent season. This insinuates that the legal systems within the horticulture industry are fragile and the policy makers should be able to address this in order to cater for the peculiarity in agribusiness which include emergence of drought, diseases or even adverse fluctuations market demands and prices amongst others.

Though sourcing from spot markets does not guarantee quality standards, it complements the contracting of small scale farmers, as a popular mode of sourcing the produce. However, this phenomenon arises as a result of other Asian Vegetables exporting businesses off loading their produce to other exporting companies; this could be either due to overproduction, or because of not being able to meet the desired large quantities that would be economical to export. In such a case the produce would be of desirable quality because the later company would have had the intention to export and therefore would have followed the laid down process and procedures during the production stage.

For objective two, factor analysis was done to identify the underlying factors that greatly influence the extent of the vertical integration among the companies interviewed. The study established four factors; the first being the ability of the relationship to meet the Product specification as required by the market. This precisely reflects the sensitivity of the end consumers of the horticulture produce who are conscious about the quality of the products, hence the existence of several stringent standards within the sector. The second factor is appropriateness of the Contractual contents and ability to follow them through in delivery of the product. In the analysis, this factor was loaded on by Timely supply, Speed of delivery and Assurance of supply which are imperative in exporting business because of its complex logistics such as limited cargo flight schedules. The third factor that also influences the extent of the vertical integration is the ability of relationship to

deal with financial expectations of both the exporting companies and the consumers; since the exporting companies expect to reduce costs in order to be competitive with other Asian countries that produce and export the product at a lower cost while the consumers expect value for money given that they provide a niche market. The fourth factor is the ability of the relationship to allow the exporting companies to control their association with the contracted farmers; it had Control of supplies (inputs) and efficient resource utilization loaded on to it. Being in control of the relationship enables the exporters to manage and keep off the opportunistic middlemen who are common in the trade and do interfere with the exporting companies' production and supply projections.

5.3 Limitation of Study

There was non cooperation from some of the exporters, who found some questions bordering on their business secrets and were not willing to answer or gave evasive answers.

Some companies just hold the export licenses but are not involved in the actual transaction of the commodities; instead they hire the licenses out to other businesses which do not have the export licenses and this made it difficult and time consuming to collect information since some companies in the data base from HCDA were not active exporters.

This study focused on only Asian vegetables export business; a similar study can be done for other high profit return export horticultural crops in order to contribute to the development or revision of general policies in horticulture.

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This study focused on the Asia vegetables exporting business and hardly any information was collected to give insights on the perception of the contracted farmers in these strategic vertical integration relationships. The findings of such a study would be of interest to the Agriculture policy formulators as well as the exporting business keen to enhance the relationship between them and small scale farmers whose contribution to the Kenyan economy is immense.

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APPENDICES

APPENDIX 1

Major Vegetable production and Export 1999-2003

Commodity	1999	2000	2001	2002	2003	% 2003
	(in tonnes)					
ASIAN VEGETABLES	10,241	10,261	11032	11,583.	12,162.	18%
BEANS						75%
<i>Bobby</i>	371	389	419	440	462	
<i>Canned</i>	8143	8,753	9,410	9,880	10,374	
<i>French</i>	27,729	29,116	31,299	32,864	34,507	
<i>Frozen</i>	500	550	591	621	652	
<i>Prepack</i>	627	690	741	778	817	
						7%
PEAS						
<i>Sugar snaps</i>	1,237	1,361	1,463	1,536	1,613	
<i>Snow</i>	2,357	2,593	2,787	2,926	3,073	
<u><i>Others</i></u>	<u>337</u>	<u>388</u>	<u>417</u>	<u>438</u>	<u>459</u>	<u>.07%</u>

Source Okado 2003 pg 8

Common Name	Other Names	Scientific Name
Chilli	Capsicum, Hot pepper, Pilipili	Capsicum annum L.
Brinjal	Egg plant, Aubergine,	Solanum melongena
Garden egg, Biringanya (swa).		
Okra	Ochro, Okro, Lady's finger, Habicus esculentus L.	
Gumbo, Mbinda (swahili).		
Courgette	Marrow, Vegetable marrow,	Cucurbita pepo L.
Summer Squash		
Mangetout	snowpea, sugar pea.	Pisum sativum L. var
macrocarpon ser		
Karela	Bitter Gourd	Momordica charantia L.
Dudhi	Bottle Gourd, White flowered	Legenaria siceraria (molina)
Curry Leaves	Limdi	Murray koenigii
Papdi	Patri, Bbonavist Bean,	Dilicos lablab L.
Dolichos Bean, Njahi (kikuyu)		
Chora	Asparagus Bean, Vegetable	Vifna sinensis (L)
Tinda	Round Gourd,	Citrus vulgaris var
Fistulosus.		
Saragwa	Drumstick, Singo (swah).	Moringa oleifera lamk.
Valore	Hyacinth Bean, Mafutu (swa)	Labkab perpureus L.
Tindori	Ivy Gourd, small Gourd.	Coccinia cordifolia cogn.
Tuwer	Pigeon pea, Mbaazi (swa).	Cajanus cajan (L), mill sp.
Turia	Angled lofah, Ridge Gourd,	Luffa acutangula (L) Roxb
Patra	Taro, Cocoyam, Dasheen,	Colocasia anntiquorum.
Aarvi, Nduma (swa).		
Mooli	Radish	Rophamus sativus L.
Methi	Fenugreek	Trigonella foenumgraecum

Source Okado Kenya off- season and specialty vegetables 2003 pg 47

APPENDIX 3

Correlation Matrix

		Timely supply	Certainty of quality	Assurance of supply	Certainty of quantity	Speed of delivery	Control of supplies	Cost savings	Response to consumer needs	Efficient resource utilization	Spreading risk
Correlation	Timely supply	1.000	-.356	-.127	-.493	-.105	.060	.244	.000	-.251	-.166
	Certainty of quality	-.356	1.000	-.301	.093	-.266	.060	-.056	-.083	.140	.050
	Assurance of supply	-.127	-.298	1.000	-.253	-.436	-.033	-.178	-.131	.181	.185
	Certainty of quantity	-.493	.093	-.253	1.000	-.212	-.134	-.182	.140	.081	.128
	Speed of delivery	-.105	-.266	-.436	-.212	1.000	-.048	.144	.121	-.118	-.150
	Control of supplies	.060	.060	-.033	-.134	-.048	1.000	-.143	-.358	-.332	-.010
	Cost savings	.244	-.056	-.178	-.182	.144	-.143	1.000	-.475	-.092	-.320
	Response to consumer needs	.000	-.083	-.131	.140	.121	-.358	-.475	1.000	-.251	-.160
	Efficient resource utilization	-.251	.140	.181	.081	-.118	-.332	-.092	-.251	1.000	-.225
	Spreading risk	-.166	.050	.185	.128	-.150	-.010	-.320	-.160	-.225	1.000

a Determinant = 6.703E-04

■ Correlations greater than absolute 0.300

APPENDIX 4

Asian Vegetable exporters summary

For the period 01 Dec 2004 to 31 Dec 200

1. REAP HORTI.
2. EVEREST ENTERPRISES
3. KENYA HORTICULTURAL EXPORTERS
4. SUNRIPE (1976) LIMITED
5. VITACRESS (K) LTD
6. AAA GROWERS LIMITED
7. OLE SIRIKON FRUITS AND VEG
8. EAST AFRICAN GROWERS
9. HOMEGROWN (K) LTD
10. TERRASOL (K) LTD
11. AVENUE FRESH PRODUCE
12. KENYA HORTICULTURAL EXPORTERS
13. SHER AGENCIES
14. VEGPRO (K) LTD
15. WILHAM (K) LTD
16. KENYA FRESH PRODUCE
17. GREENLANDS AGROPRODUCERS
18. VERT FRESH LTD
19. FRESHPAK HORTICULTURES
20. KENYA FRESH PRODUCE EXPORTERS
21. BIOGROWERS LTD
22. OLIJ ROZEN KENYA
23. MAKINDU GROWERS & PACKERS LTD
24. SCAN AFRICAN EXPORTERS
25. EVEREST ENTERPRISES

26. HORT. FARMERS & EXPORTERS
27. MAKINDU GROWERS & PACKERS LTD
28. MYNER EXPORTS LTD
29. OSERIAN DEVELOPMENT CO. LTD
30. SACCO FRESH LTD
31. SUNRIPE (1976) LIMITED
32. WAMU INVESTMENTS ENTERPRISES
33. WILHAM (K) LTD AGRICULTURAL EXPORTERS
34. WONI VEG-FRU EXP. & IMPORTERS
35. OZZIKA GARDEN CENTRE
36. EAST WEST EXPORTERS
37. OKA FRESH EXPORTERS FRUITS & EXP
38. ROZZIKA ENTERPRISES LTD FRUITS
39. GREENLANDS AGROPRODUCERS
40. THE FRESH APPROACH LTD KENYA
41. VERT FRESH LTD APPROACH LTD
42. KYOME FRESH FRUITS EXP. & IMPORTERS
43. SELECTION FRUITS ENTERPRISES
44. CARGOLINE EXPRESS LTD
45. BROTHERHOOD AGENCIES
46. AFRIFRESH CONVEYORS LTD
47. UKULIMA EAST AFRICA
48. KENYA HORTICULTURAL EXPORTERS
49. MAKINDU GROWERS & PACKERS LTD
50. MBOGA TUU
51. SUNRIPE (1976) LIMITED
52. WILHAM (K) LTD
53. EAST WEST EXPORTERS
54. KENYA FRESH PRODUCE

55. GREENLANDS AGROPRODUCERS
56. AAA GROWERS LIMITED
57. INDU-FARM EPZ LTD
58. FOUR-TEN
59. CLEOSAM ENTERPRISES
60. SELECTION FRUITS ENTERPRISES
61. KENYA HORTICULTURAL EXPORTERS
62. LONGONOT HORTICULTURAL LTD
63. MYNER EXPORTS LTD
64. VEGETABLES
65. HILLSIDE GREEN GROWERS & EXP
66. HORT. FARMERS & EXPORTERS
67. WILHAM (K) LTD
68. GREENGOLD ENTRPRISES KENYA
69. THE FRESH APROACH LTD
70. WONI VEG-FRU EXP. & IMPORTERS

The Respondent
P.O. Box _____ (optional)
Nairobi _____

Re: Request for Participation in Research Work.

I am postgraduate student in the University of Nairobi pursuing my MBA degree. In order to fulfill the degree required, I am undertaking a management research on Vertical integration in Asian Vegetable export Business in Kenya. The study is purely for Academic purposes. All information given shall be kept strictly confidential. The study may bring out some suggestions, which could be useful for the industry. A copy of the final report may be availed to you on request once the study is complete.

Your organization being one of the successful firms in these hard times has been selected for this study.

I would appreciate if you spare time to kindly complete the attached questionnaire for me
Thank you for your valuable time.

Yours faithfully

Student's signature

Supervisor's signature.

APPENDIX 6 Data collection questionnaire.

A Survey on the Extent of Vertical Integration in Asian Vegetables Exporting Businesses in Kenya

Section A: General Business Information

1. Name of your organization _____ (optional)
2. Designation of the respondent _____
3. How long has your organization operated in Kenya
 1. 0 to 5 years
 2. 6 to 10 years
 3. 11 to 20 years
 4. Over 20 years
4. How long has your organization been in the Asian Vegetable sub-sector?
 1. 0 to 5 years
 2. 6 to 10 years
 3. 11 to 20 years
 4. Over 20 years
5. Number of employees (*not casuals*).
 1. 0 to 10
 2. 11 to 15
 3. 16 to 20
 4. Over 20
6. What is the geographical coverage of your operations in terms of sourcing raw material within Kenya? [*possibilities of multiple responses*]
 1. Eastern Kenya
 2. Western Kenya
 3. Central Kenya
 4. Other parts
 5. Whole country
7. What markets do you serve? [*possibilities of multiple responses*]
 1. Local /national
 2. East African /regional
 3. Other parts of Africa
 4. EU markets /European
 5. Middle East and Asian
 6. Americas

8. What do you consider to be your core competency?
1. Production
 2. Grading, processing & Packaging
 3. Transportation
 4. Consolidation of orders
 5. Others (specify _____)
9. Does your organization have a clearly articulated business strategy?
1. Yes
 2. No
10. What kind of Strategic planning process does your organization follow?
1. Highly formalized
 2. Fairly formalized
 3. Some what formalized
 4. Vaguely formalized
 5. Non formalized
11. RANK the following organizational performance attributes based on the knowledge and business strategy of your firm – by order of importance; 1 to 5; 1 being the most important.
- i). Profits
 - ii). Revenue and sales
 - iii). Growth
 - iv). Survival
 - iv). Market share
12. How many Asian Vegetable varieties does your firm export? _____
13. Where do you rank Asian vegetables in terms of profitability based on your firm's experience? (i.e. 1st, 2nd, 3rd, etc. {in respect to other product lines and businesses} etc.)

14. How do you rank the level of dynamism in the Asian Vegetable Export Business?
1. Extremely dynamic
 2. Very dynamic
 3. Fairly dynamic
 4. Averagely dynamic
 5. Not dynamic /static

Section B: Extent of Vertical Integration in Asian Vegetable Exporting Business

15. Which of the following strategies do you often use to access your Asian vegetables for export? Please tick the appropriate box(es) [possibilities of multiple responses]
1. Own farms
 2. Spot / open markets
 3. Short term contracts - 1-3yrs

4. Long term contracts - More than 3 yrs

16. If engaged in more than one sourcing arrangements, what are the estimated volume (expressed as a percent) for each of these? *[all your proportions should equal 100%]*

- i). Own farms _____ %
ii). Spot /open markets _____ %
iii). Short term contracts - 1-3yrs _____ %
iv). Long term contracts - More than 3 yrs _____ %

(The rest of the Questions within this section are NOT relevant to those firms depending solely on their own farms for markets' supply and satisfaction)

17. Are you engaged in any contractual relationship for sourcing Asian Vegetables for the market?

1. Yes
2. No

18. If Yes to Q17, of what form are these contracts? *[possibilities of multiple responses]*

1. Written
2. Verbal

19. How is your current pricing of the products bought through contract arrived at?

1. Fixed prices at the beginning of each season
2. Flexible prices based on world and local market prices
3. Spot market prices
4. Other systems (specify _____)

20. What does your contract with the small-scale farmers in Asian vegetables entail? *[possibilities of multiple responses]*

1. Ascertain market for the product
2. Provision of market information
3. Provision of Technology and equipment
4. Provision of farm inputs
5. Training
6. Provision of extension services
7. Setting up of and managing collection /buying centers
8. Others (specify _____)

21. Are there any of your firm's business assets that are used by the small holder farmers? (e.g. collection centres, sprayers etc.)

1. Yes
2. No

22. If Yes to Q21, please list them;

23. What is the agreement based on? [*possibilities of multiple responses*]
1. Legal measures
 2. Trust
 3. Reputation effect
 4. Tacit understandings
 5. Professional norms
 6. Others (specify _____)
24. How do you reinforce these agreements within the marketing relationship? [*possibilities of multiple responses*]
1. Legal measures
 2. Cutting off inputs if farmer does not accomplish as agreed
 3. Refusing to buy subsequent seasons
 4. Others (specify _____)
25. What challenges does your firm experience in your relationship with the small scale farmers contracted to supply the Asian Vegetables?

Section C: Factors Influencing Vertical Integration in Asian Vegetable Business

26. Rate the following factors in terms of their importance and how they influence the choice of your strategy (*i.e. whether own farm or contracting small scale farmers*) within the Asian vegetables supply chain? Please RANK from 1 to 5; 1 being the most important.
- i). Control of supplies (Quantity, Quality and price)
 - ii). Cost savings
 - iii). Response to consumers needs
 - iv). Efficient resource utilization
 - v). Spreading risk
27. Which is the factor you consider most important in your strategic relationship within the Asian Vegetables supply chain? Please RANK from 1 to 5; 1 being the most important.
- i). Timely supply
 - ii). Certainty of quality
 - iii). Assurance of supply
 - iv). Certainty of quantity
 - v). Speed of delivery
28. Do you consider your current strategic relationship with the small-scale farmers appropriate?
1. Yes
 2. No
29. If No to Q28, what factors hinder your attaining the ideal relationship?