STUDENT’S DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university other than the United States International University in Nairobi for academic credit.

Signed: ___________________________  Date: ___________________________  
Elizabeth A. Mranda (ID: 629717)

This project has been presented for examination with my approval as the appointed supervisor.

Signed: ___________________________  Date: ___________________________  
Fred Newa

Signed: ___________________________  Date: ___________________________  
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By Elizabeth A. Mranda, 2013
ABSTRACT

The purpose of this study was to assess the success of technology transfer in the agrochemical companies based in Nairobi. The study was guided by the following research questions: What types of technology transfer models are in use mainly in agriculture? What is the role of the government in the augmentation of technology transfer? And which organizational capabilities advance technology transfer?

The methodology adopted during the study was in form of a descriptive design whereby the respondents were asked their opinions on different aspects of technology transfer. The target population of this study consisted of 58 companies on the AAK list as at July 2013, in each organization four people were considered leading to a total population of 232 respondents. A sampling method known as systematic sampling technique was used to select the sample of 11 companies consisting of 44 respondents. Data was collected by conducting structured questionnaires to explore all relevant issues. The data was then analyzed using descriptive statistics and the variables described by means as the output of the data was presented in tables and figures. The main data analysis tools used in this study was the Statistical Package for Social Sciences (SPSS).

The findings indicate that the types of technology transfer models used in agriculture were that the organisation offers training to increase technological skill of the local workers. This was followed by the organisation having a locally based manufacturing plant; there was technology transfer through foreign affiliation and the existence of multinationals to enhance adoption of technology. However, many respondents disagreed with the point that locally companies do not innovate their own technology.

The findings established that the government works closely with organization to introduce new products, followed by the awareness of the government policies surrounding technology transfer, the organisation's inventions are protected by intellectual property rights and the labour laws support knowledge transfer from expatriates. However, many respondents disagreed that the government offered incentives to encourage technology transfer.

The findings established that the most of the respondents agreed that the organisation plays a key role on its ability to adopt technology. This was followed by the organisation
structure playing a key role in the transfer of knowledge, a number of the multinationals have easy access to technology and employees level of education influences diffusion of technology. However, many respondents disagreed that the employees are motivated to embrace innovation.

The main conclusion is that Promoting technology and technological innovation requires intensive training. The government plays a great role in enhancing the transfer of technology. Sufficient technology can be realized when an organization enhances its capability to handle complex technical process to the point of creation of technologies and adoption.

The study recommends that there should be intensive training in promoting technology and technological innovation. The government should play a vital role in enhancing the transfer of technology. An organization should enhance its capability to handle complex technical process to the point of creation of technologies and adoption. The organization structure should define specific role to ensure coherence of the organization as a whole.
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DEDICATION
I would like to dedicate this research project to my husband, Mr. David Chweya, my daughter Naomi for the many nights you stayed up waiting for my return from school or while I did my research, for your encouragement and support. Not forgetting my larger family; brothers, sisters and all my in-laws for your understanding and patients.
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<tr>
<td>CBK</td>
<td>Central Bank of Kenya</td>
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<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
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<td>MDG</td>
<td>Millennium Development Goals</td>
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<td>STI</td>
<td>Science, Technology &amp;</td>
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<td>FDI</td>
<td>Foreign Direct Investment</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>TT</td>
<td>Technology Transfer</td>
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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

Consumers around the world are being trained to expect more, this has led to a highly turbulent business environment that has seen a lot of change on how businesses and industries as a whole carry out their operations and strategy. To keep abreast with these expectations, most organizations incline to innovation as the single most important factor to consider in enhancing the competitiveness. To ensure future competitiveness organizations at large must invest in technology to keep up (Sabir and Sabir, 2010).

Wei-wei, Liang, Yu and Yang (2010) allude that technology is a key driving force that determines the strategic future of a firm. Failure to recognize this in time may result in a technology substitute, which will lead to major loss of market share, causing firms to be extinct or even to leave growing and profitable industries. In many technology-intensive industries, research and development activities have grown to be ranked among the second or third heaviest consumers of company funds. The high investment in technology has drawn management to continuously evaluate technology decisions as part of the long term strategies, for competitive survival (Chebbi, 2010).

The concept of strategic planning for technology within organizations is of great importance. Strategic planning recognizes the need to integrate business and technology. Considering the high cost of research and development to most companies, a fundamental part of technology management is in acquiring the technology (Ingmar, Gunter and Eero, 2007). This is led by a conscious organizational policy to enhance capacity of workers to improve performance, efficiency and output of equipment. This can be done mainly through training, information exchange and technical cooperation as the most effective way organizations can facilitate technology transfer (Trott, 2008).

Indeed, appropriate sourcing and adaption of technology can be a major source of competitive advantage. A case in question is China, who during the reform period, the expansion of major food crops was ranked as one of the great achievements of the nation. This greatly was as a result of mobilization of inputs which saw the increase of crops such as maize by 95%, which did not result all from technological improvement, but from aggregate inputs such as land, labor, fertilizer, herbicides, seeds and capital goods. Other
areas such as land sown area and labour declined putting a challenge to China’s future food supply (Jasinski, 2009). The rise in fertilizer and pesticide use also declined in the 1990’s as the country’s input usage plateau, leading the focus on technological change as a means of further development (Jin et al., 2002).

Ojwang (1992) states that the manner in which developing countries have approached the issue of access to technology has raised a number of questions on the ability of these countries to fully benefit from any scheme that allows access to essential technologies. In Africa, technology transfer still refers to policy and practice (Raymond, 2009). The assumption that the mere removal of certain barriers will lead to the transfer of technology to the developing countries is not viable such as relaxation of intellectual property and licensing restrictions, will not necessarily lead to technology transfer. This is illustrated by the failure of developing countries to fully utilize the technological information that is on the public domain or whose patents have expired (Minbaeva, 2007).

Kenya, like most other African countries depends heavily on agriculture. The agricultural sector dominates the economy and accounts for an estimated 24 percent of the gross domestic product and employs 18% of formal labor in the country. As stated in Kenya vision 2030 (2007), for the country to realize the economic growth highlighted in the MDG growth; the agricultural sector needs to grow rapidly (Juhaini, Claudine and Ricardo, 2010).

Oluoch-Kosura, Ariga and Okeyo (1999) alludes that this growth can be attained either by expanding of cultivated area, by substitution of higher valued commodity or by intensification of production through technological advancements. With the first two options limited due to increasing population and diminishing of cultivable land, the third option stands, as it will enable increase of output per unit land area. Thus a shift from resource based agriculture to a science and knowledge-based agriculture (Paul, 2008).

A vital challenge to the Kenyan agriculture is the low application of modern technology; that has impeded development in agriculture. Ministry of Agriculture (2009), Attention must thus be given to the speed at which innovation is being diffused into the way farming is done. The paper goes on to site inadequate research –extension- farmer linkage
a lack of demand driven research. Jasinski, (2009) emphasizes that innovation and technology transfer now have a crucial role to play in modernizing the economies in transition and facilitating steps towards a knowledge-based economy or society. This factor necessitates Kenya’s agricultural sector to enhance the speed of technology transfer, specifically the agrochemical industry, a factor that is deemed as wanting (Ojwang, 1992).

Agrochemical usage is a key factor in the Kenyan Agricultural sector in crop production, accounting for over 70% of farm inputs used by farmers. Most of the chemicals used in this sector are imported as ready products from either the West or the East (Ojwang, 1992). The sector has suppliers both of local based companies and multinationals, with most of them based in Nairobi (Ramanathan, 2000). Formulation of the agrochemicals used is done from the global head quarters and products are registered locally before use by local government agency PCPB to check adaptability, with little or no extra work done to the products (Ojwang, 1992).

Despite having multinational companies in the industry like Sygenta, Monsanto, Bayer CropScience, BASF, DuPont and Dowcrop science, local companies also are present in the industry. This makes the issues on technology transfer vital in enhancing the Kenya’s capacity to sustain a competitive agricultural sector (Ojwang, 1992). As study on the challenges of technology transfer in Nairobi based agrochemical firms is of interest to this industry as it reflects the role of technology in maintaining organizational, industry and country competitiveness in this sector. Some key areas to consider surround technology in relation national sovereignty, industry or national capabilities, multilateral agreements and finance (Ramanathan, 2000).

1.2 Statement of the Problem
Technological advances in Kenya’s agrochemical industry are mainly as a result of imported products from foreign countries. In most cases these are not adapted or even enhanced to fit the local environmental situation with the exception of repackaging. This does not result in technological transfer, which is defined as being the transfer of systemic knowledge for the manufacture of a product for application of a process or for the rendering of a service and does not extend to the transactions involving the mere sales of goods (Ojwang, 1992). Kenya at present is a net importer of agro-technology in the form
of ready products and formulations, with little or nothing done to adapt or enhance the technology.

Technologies cannot be freely acquired; therefore developing countries require that genuine additional financial resources are made available to facilitate transfer or acquisition of technologies (Ojwang, 1992). This has posed a challenge to most of agrochemical companies in Kenya, thus they do not carry out internal R&D and they neither set aside funds for technological advancement. This study sought to find out if agrochemical companies based in Nairobi set aside funds for technological advancement and transfer.

For sufficient technology transfer to take place, the Kenyan agrochemical industry needs to enhance its capability by increasing its ability to handle complex technical process to the point of creation of technologies and not just adoption. Issues in question surround the ability of the industry to handle technological advancements. As recipients of technology they will need to have among other things management support and incentive systems that encourage learning and assimilation of new technologies (Ramanathan, 2000). This study intended to find out the support and incentive systems in place within the agrochemical firms based in Nairobi that encourage technological transfer.

With no technological advancement, the industry is limited as it cannot increase human skills and knowledge. This has and will continue leading to limitation in the value of this industry and in essence economic contribution. Organization's innovative capability is determined by its absorptive capacity; with the ability to recognize the value of new information, assimilate it, and apply it to productive ends (Cohen and Leivithal, 1990). This paper seeks to establish if the local companies have the capacity to adapt, enhance and create technological advancement as contributed by the workforce and skills at the industry level.

With agriculture in Kenya contributing to at least 30% of the GDP, MOA, (2009) and is heavily dependent on agrochemicals to reduce wastage as a result of pest and disease during active growth and also to ensure continued crop production in Kenya. This sector is of great importance and to ensure competitive advantage is maintained in agriculture it is inevitable to innovate to ensure future sustainability and enable technology transfer.
For this to occur, the government must play its role in ensuring there is adequate support in the industries operating environments.

The question surrounding the support that the Kenya agrochemical industry is receiving from the government in terms of infrastructure, and institutional support, is of great importance to enhance technological transfer. Without the government support, the industry resolves to high dependency of foreign supplies (Ramanathan, 2000). These factors are deemed as wanting in the industry context despite its important role.

Kenya, like any other developing country has used the attraction of foreign direct investment to enhance technology transfer. With some positive impact, over the decades on issues related to; capital and investments, employment and output diversification. Technology transfer has nevertheless not resulted in the embodiment of technology or usage of complex technology (UN, 2005). The worrying fact is if legislation, incentives and intellectual property rights are not adequately in place to promote innovation in this industry little development will result.

Advancements in technology are being seen as a vital national development and therefore restrictions are being imposed on the transfer to competing countries. This has led to major issues on technology transfer and patents which are a point of discussion even in the agricultural sector (Ojwang, 1992). This study will seek to establish the role played by host countries in issues surrounding sovereignty in relation to technology as this will impact on the transfer of the technology.

At this juncture we need to consider the availability of raw materials used in the manufacture of the agrochemicals and if Kenya has suppliers that can meet the international quality. This study will contribute useful literature to understand this, among other factors that can bring about challenges in the technological transfer. In essence for technological transfer to be effective and necessary, the characteristic and goals of the supplier and the receiver of the technology need to be considered (Gilbert, Kelley and Barton, 2003). To the best knowledge of the researcher, little or no studies have been carried out in this area of study. This study intended to make great contributions to the technological transfer challenges in the agrochemical industry.
1.3 Purpose of the Study
The purpose of this study was to assess the success of technology transfer in the agrochemical companies based in Nairobi.

1.4 Research Questions
1.4.1 What types of technology transfer models are in use mainly in agriculture?
1.4.2 What is the role of the government in the augmentation of technology transfer?
1.4.3 Which organizational capabilities advance technology transfer?

1.5 Importance of the study
1.5.1 Agrochemical Companies
This study will be useful to the Nairobi based agrochemical industry in advancing the use of technology as a strategic competitive advantage for sustainability.

1.5.2 Employees in the Industry
This study will assist employees in the industry understand their role in technological advancements in the industry. This will lead to training, attention, and participation in ensuring continuous innovation in the industry.

1.5.3 Agricultural Industry Stakeholders
This study upon competition will highlight factors to consider as the country plans the MDG in relation to agriculture. The spillover effect will also impact other sectors and snowball into economic development. Thereby enhancing of technological innovation, thus improved production and food security in Kenya.

1.5.4 Future Researchers
The results from this study, will be establish as a platform for future study to the questions on how Kenya can fast forward the technological advance in the agricultural sector mainly in the agrochemical subsector. Resulting in the agrochemical industry, both private sector and public sector establishing a way forward to understand limitations that face technological capacities increase adoption.
1.6 Scope of the Study
The research was limited to agrochemical companies based in Nairobi. These companies are involved in the distribution and importation of agrochemicals used in the control of pests and disease in agricultural crops. Though the companies distributed the chemicals across the country, the study was limited to the ones based only in Nairobi. The companies studied were selected randomly with the list of the respondents obtained from across section of employees and management staff. The study took approximately three months to complete starting from May 2013 and ending in July 2013. The main limitation was lack of adequate and timely response to questionnaires issued. Also issues surrounding access to certain top level management staff leading to limited participation at that level.

1.7 Definition of Terms
1.7.1 Technology
Technology is defined as knowledge applied to product or production process, in the form of skill, equipment, expertise or even machinery (Trott, 2008).

1.7.2 Technology transfer
This is the application of technology to new users or new use a term Trott, (2008). Leading to a process in which technology developed for one purpose is employed either in a different application or by a new user.

1.7.3 Competitiveness
Sabir and Sabir, (2010) defines competitiveness as a combination of two capabilities, i.e. to innovate and develop novel technologies and products, and, to deploy and improve the operational processes that efficiently produce and deliver these goods and services to the customer.

1.7.4 Transferee
Transferee refers to one to whom a conveyance of title or property is made (Sabir and Sabir, 2010).

1.7.5 Transferor
Transferor refers to one who conveys a title or property to another (Trott, 2008).
1.8 Chapter Summary

The rationale of this study is to investigate the main challenges surrounding technology transfer in the agrochemical industry, in companies based in Nairobi. The findings will enable the industry establish strategies that will result in an increase in the technology capacity and enhance technological transfer. This will ensure competitiveness and also enhance sustainability in the globalised business environment.

Led by the importance of agriculture to the future of humanity and the key to embracing technology, the study will seek to enhance production in the support the rapid population growth in Kenya through technological advancements. The study will highlight the need for a faster adoption of the technology and point out some of the challenges directed towards three factors. These relate to the organization capability as the recipient of the technology and its limitations, the role played by the government to create an enabling environment in enhancing technological transfer and also the role of the transferor, in encouraging transfer of technology.

The chapter has also pointed out the significance of the study to the organizations in the industry, the workforce and other stakeholders. The scope was determined and terms defined accordingly. The next chapter looks at the literature review of this study to collect different views on the challenges of technology transfer. Chapter three looks at the research methods and design followed by chapters four and five whose objective analyzed the results, findings and finally a discussion, conclusion and recommendation respectively.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter covers a detailed and focused analysis of published sources that cover issues related to the topic of technology transfer. The chapter is divided into 3 sections; the first section will look at technology transfer theories that exist to support organizational strategy for sustainability, the second part will be on government as a key stakeholder in the transfer of technology, and the third section will cover the internal organizational capabilities and the role this plays in technology transfer.

Goh (2002) reiterates that the use of technology already developed by other countries is considered to be of relatively low cost, thus countries that understand this create incentives for technology transfer through various channels. The main vehicle is through policies that govern foreign firms and also encourage local or domestic firms seeking to adopt technology. These bringing about technology transfer channel/model selection that are favorable in relation to the government policies that incentivizes the same, in addition to increase in absorptive capacity in the recipient firm. Thus with the 3 factors considered, technology transfer is bound to be successful.

2.2 Models of Technology Transfer in Use

In today’s globalised and liberalized business setting, many technology transfer models can be used depending on how the technology development chains are linked between the transferee and transferor. This can be either vertical or horizontal, where vertical transfer refers to the transfer of technology from basic research to applied research and eventually into production or horizontal technology transfer where movement and use is of technology used in one place, organization or context to another place (Richard and Eric, 2005). This study will focus on the horizontal models only.

Dussauge et al (1992) affirms that in order to effectively integrate transfer of technology into generic strategies 3 fundamental technological choices must be made. This is in relation to the selection, acquisition and exploitation of technology. Thereby identifying and selecting new or additional technologies, determining the specific means to acquire the given technology and determining ways of implementation the technology respectively (Raymond, 2009).
Dussauge *et al.* (1992) further declare that technology transfer can be through various vehicles that relate to, and are not limited to, use of internal development through research and development or acquiring a firm that possess the desired technology in the acquisition model. Both these models whoever require great amounts of time and resources. This has led to most firms’ preference in the use of a model that enhances transfer of technology that already is in existence, mainly through foreign direct investment- FDI. Most developing countries in the world have acquired technology through FDI; a model developing country such as china has more than $500 billion in FDI (Long, 2012).

Glass and Saggai (2002) posit that foreign direct investment is one of the most preferred channels through which technology can be transferred. This can be either by royalties, licensing, joint ventures or alliances. It encourages multinationals to establish local production facilities in the host country and transfer is generally obtained through imitation.

2.2.1 Types of Foreign Direct Investment used in Technology Transfer

2.2.1.1 Licenses/ Contracts

Licensing arrangement is essential for brand equity. According to Stonehouse *et al.* (2004), a license may be granted by a party to another party as an element of an agreement between those parties. A shorthand definition of a license is an authorization (by the licensor) to use the licensed material (by the licensee). In particular, a license may be issued by authorities, to allow an activity that would otherwise be forbidden. It may require paying a fee and/or proving a capability. The requirement may also serve to keep the authorities informed on a type of activity, and to give them the opportunity to set conditions and limitations

Under licensing arrangement, the company allows a third party to use its intellectual or property rights, product, brand etc, and the two parties agree on the basis of a profit sharing agreement, usually pro rata (Stonehouse *et al.*, 2004). It is used in industries where branding is important especially in Fast Moving Consumer Goods, foods, pharmaceuticals and brewing. Fan, Nyland, and Zhu (2008) suggest that in some
instances of licensing the organization charges a fee or royalty for the use of its technology, brand and expertise to a third party.

The licensing option will give access to technologies developed by firms in other industries or by competitors in the same business. They significantly reduce the use of technology and fees are attached to the profits made from sales of products as a result of the technology. Foreign direct investment is one of the most important channels through which technology can be transferred this can be done by foreign companies and their subsidiaries through royalties and licenses. Glass and Saggai (2002) accord this mode of transfer over 80% of international technology transactions.

Investment policy of Kenya review states that there has been very little done in relation to foreign technology contract, with most local firms purchasing technology embodied in used equipments (Phene, Madhok and Liu, 2005). One company however stands out as having extensive licensing relationship with foreign enterprises that has resulted in extensive technology transfer, namely Haco industries. In the agrochemical sector some multinational organizations have gained entry in the local markets through partnerships and contracts. Companies such as Dow science have its presence in Kenya through partnerships with Lachlan, a local company who is licensed to distribute their products in Kenya.

2.2.1.2 Joint Venture or Alliances

Joint ventures and strategic alliance leverage the partner’s skill base, technology, and local contacts as a market entry strategy. This is the case where two or more multinational companies from different countries contribute resources to carry out certain activities without forming a new company. Specifically, a joint venture is a partnership formed by two or more companies for a specific business objective of which they share ownership and control (Root, 1994). Each of the partners contributes a specialized skill. Ventures facing challenging new environments usually need to turn to partner organizations for missing resources and expertise. Indeed, government regulations often require a local corporate partner to ensure market access in emerging economies (Fan, Nyland and Zhu, 2008). In this case, the transfer of technology will be done by several firms joining forces to develop new technology, thereby cost sharing the cost to reduce of the expense and
reduce individual company’s risks, thereby leading to technological alliance (Raymond, 2009).

2.2.1.3 Greenfield/Solely Owned Organizations
In addition to the fact that transnational companies invest directly, the presence of these organizations in an economy will speed up the diffusion of technology in the host country. This according to Perkins and Neumayer (2005) will be by influencing the domestic firms by bringing in cheaper and better quality products causing the domestically owned firms to adopt advanced processes and product quality to stay competitive. Technology transfer may also result from technological spillovers as the presence of TNCs will automatically result in the transfer of information, know-how, and skills about new technologies this will be through demonstration effects, employee mobility, and supply-chain linkages.

This channel will differ from the rest in that technology will move across the firm through the physical movement of workers who have been exposed to the technology. Here the source firm will decide to send expertise from their organization to the host country with the hope to retain its technological expertise. But in some instance the employees have left the organization to a local host company thereby migrating with the technological (Glass and Saggi 2002).

In Kenya just like in other developing countries FDI has played an important role in the transfer of technology especially in the agricultural sectors mainly in horticulture and floriculture. This has enabled the sector to become a leading exporter of high value products to the European market, with farms such as Homegrown investing large amounts of capital to set up world-class facilities. Over time the processes have become increasingly sophisticated, with the introduction of wireless data communication linking their production, cooling and packing facilities in Kenya with order information from their customers in Europe (Xuedong, 2006).

FDI has been at the root of transfers of skills to local workers. This has been possible due to the good trainability of employees given the relatively high level of general education. This channel will differ from the rest in that technology will move across the firm through the physical movement of workers who have been exposed to the technology (Phene,
Madhok and Liu, 2005). Here the source firm will decide to send expertise from their organization to the host country with the hope to retain its technological expertise. But in some instance the employees have left the organization to a local host company thereby migrating with the technological (Glass and Saggi, 2002).

The government imposes an understudy programme for each expatriate employee recruited by foreign investors, with the aim of replacing the expatriate with a Kenyan employee in the medium term. Foreign firms have often gone beyond the legal requirements and provided training to their employees on a wider basis. Many give a high level of responsibility to local staff by providing ongoing training programmes in order to allow them to occupy top management positions (Naghavi, 2007). Multinationals in the country are characterized as having only a few posts, often managing director and finance director, staffed by expatriates. Colgate-Palmolive for instance sends staff for training to offices abroad where the “Colgate Curriculum” is taught. Some of such staff has in turn become “Master Instructors” for Colgate worldwide (Jin et al., 2002).

In light of the same, most agrochemical multinationals have wholly own subsidiaries with a company such as BASF a world leading chemical company, having in South Africa a holding company, with manufacturing plants in Westonia, Port Elizabeth, Isando and Vanderdijlpark from where the supply of product in the southern part of the country is done.

2.3 Government’s Role in Augmentation of Technology Transfer

2.3.1 Government Role in Technology Transfer

According to Kaul and Odedra (1991) governments around the world have been engaged in the process of implementing a wide range of (IT) applications. Countries have been classified by the United Nations according to their Computer Industry Development Potential (CIPD) as advanced or less developed Mgaya (1999). Advanced include, for example, the United States, Canada, West European countries and Japan; less developed include for example Argentina, Brazil, India, Mexico, Kenya and Bulgaria. For all countries, use of ICTs for government reinvention is increasing not only in investment but also in terms of visibility with a number of high-profile initiatives having been launched during the 1990s.
Heeks and Davies (2000) argues that information infrastructures are expected to stimulate economic growth, increase productivity, create jobs, and improve on the quality of life. Over the last five years, the Kenyan government has initiated some capital investment towards set up and installation of IT infrastructure. Funding for these investments is achieved through partnerships between the government and development partners. The foreign funding component constitutes the largest percentage of this investment in terms of technology. The government contribution is usually in the form of technical and support staff and facilities including buildings.

So far, the Government Information Technology Investment and Management Framework is connecting all ministries to the Internet under the Executive Network (Limo 2003). The government is also connecting the ministries to run integrated information systems for example the Integrated Financial Management Information System (IFMIS) and the Integrated Personnel and Pensions Database (IPPD). While most developing countries may have similar characteristics, the Kenyan context presents various challenges that affect the successful implementation of IT projects.

There are a number of characteristics that define the Kenyan information technology transfer environment. Most IT projects are initially donor funded; some donations are made without prior consultation or carrying out a needs analysis by the recipient organization. The operational running costs are met by the government while the funding (capital and human resource requirements) ends with the project phase. The budgets for IT are inadequate but rising. There is also lack of IT policies and master plans to guide investment to the extent that a number donors funding IT with multiple investments for the same product due to lack of coordination leading to unstable IT resources. Aineruhanga (2004) observes that planning as a tool can help in reducing waste by identifying pre-requisites conditions for successful IT implementation. Hence, government support can reinforce successful implementation of information technology projects.
2.3.2 Government Policy in Relation Technology Transfer

2.3.2.1 Science Technology and Innovation

Jasinski (2009) posits that national long term strategy of science and technology is one of the major features of policy that influence technology transfer in any given country. In Kenya’s vision 2030, science, technology and innovation has been given due attention as one of the key economic growth factor that will enhance efficiency, sustain growth and promote value addition in goods and services. The Kenyan government in its role to facilitate technology transfer in the various sectors has identified key elements that will allow effective exploitation of knowledge, these include; providing incentives for effective use of existing knowledge and creation of new knowledge, educating the population so that the skill level will enable use and creation of knowledge, facilitating infrastructure that will enable communication dissemination and forming effective innovation systems that can tap into the growing stock of global knowledge, assimilate and adopt these to local needs (Kenya Private Sector Alliance, 2013).

Kenya, through the national council for science and technology has established a science and technology act Cap 250, with a main function of considering and advising on scientific activities related to the transfer of technology into agriculture and industry. With these in mind Kenya has come up with several strategies in the vision 2030 paper that are aimed at promoting science technology and technological innovation. They include and are not limited to; strengthening technical capabilities, this will be through advanced training of personnel, improved infrastructure and equipment. These are geared to increasing capacity of local firms to be able to identify and assimilate existing knowledge to increase competitiveness (Ministry of Trade, 2013).

2.3.2.2 Labour Laws in Relation to Technology Transfer

Other avenues include improving high skilled human resources, through training mainly in Science and technology; Intensifying innovation in priority sectors, by increasing funding for basic and applied research at higher institutions of learning for research and development. Technological transfers have taken place mostly through transfers of managerial skills and processes, and not so much through embodied technology (Rivera-Vazquez, Ortiz-Fournier and Flores, 2009). The Kenya Government imposes an understudy programme for each expatriate employee recruited by foreign investors, with the aim of replacing the expatriate with a Kenyan employee in the medium term. This has
enforced the transfer of knowledge by multinationals and other foreign firms to the local firms.

However certain foreign firms have often gone beyond the legal requirements and provided training to their employees on a wider basis. Many give a high level of responsibility to local staff by providing ongoing training programmes in order to allow them to occupy top management positions. Most multinationals in the country are characterized as having only a few posts, often managing director and finance director, occupied by expatriates (Xuedong, 2006).

2.3.2.3 Taxation and Impact on Technology Transfer

According to Guoqiang, Zhang, Feng and Pan (2003), countries such as China have used the taxation laws in attracting foreign direct investment that has resulted in technology spill over to the local firms. This they have attained through neutral tax policies such as refunding VAT for export and also through the voluntary tax policy which refers to tax preference and trade facilitation. The result has added to a large number of research and development centers in the country.

Africa in general has approached this through privatization and liberalization over the past decade, in addition to simplification of administrative procedures. To attract FDI and hence technology transfer, Kenya has in the recent past provided a wide range of tax incentives to businesses. This has been through tax holidays, tax credits, investment allowances and reinvestment allowances mainly to EPZ run companies. Other avenues include exemption from withholding taxes, import tariffs, export tariffs, export duties just to mention a few (Kenya law cap 476).

Kenya provides a wide array of incentives in a bid to attract technology transfer. EPZ zones were established in 1990 in order to attract FDI, as it stands 61% of the companies are foreign companies, 25% are joint ventures and 14% fully owned by Kenyans. The incentives at the EPZ include a 10 year corporate income tax holiday, 10 years exemption from withholding taxes, compensation form import duties on machinery, raw materials and inputs, 100% investments allowance on plants, and expeditious work permit for essential expatriate workers, just to mention but a few (EPZ Act, Cap.517). With one of the objective aimed at development of backward linkages in agro and natural resources
processing activities and the drawing of manufacturing, marketing and management expertise that will result in the transfer of skills and technology to Kenyans (Ministry of Trade, 2013).

2.3.3 Intellectual Property rights in relation to technology transfer

Naghavi (2007) submits that a weak intellectual property right among other factors deters nations from transferring technology from abroad. Protection of intellectual property rights (IPR) has been an issue of interest in both industrialized and developing countries. The controversies center on the relatively new Trade Related Aspects of Intellectual Property Rights (TRIPS) agreement of the Uruguay round of GATT, which has called for a standardization of IPR protection among all members of the World Trade Organization (WTO) and potential new entrants. This requires developing countries to raise their intellectual property protection level to the standard in force in industrialized nations. Who claim the loss of billions of dollars through infringement of their property rights due to lose IPR protection regime.

Kenya in a bid to enhance the IPR has a comprehensive legal framework to ensure intellectual property rights Protection, which includes the Industrial Property Act (2001), the Trade Marks Act, the Copyright Act (2001), and the Seeds and Plant Varieties Act. In a bid to create a favorable environment to enhance technology transfer it is a signatory or member of; The Paris Convention establishing the World Intellectual Property Organization (WIPO); The World Trade Organization (WTO), including the agreement on Trade-Related aspects of Intellectual Property (TRIPs);The Patent Convention Treaty; The Paris Convention for the protection of industrial property and The Lusaka Agreement on the creation of the African Regional Industrial Property Organization (ARIPO) in addition to other organizations (United Nations, 2005).

In Kenya, the Industrial Property Act is the main agency in charge of granting and enforcing property rights and trademarks. Protection can be granted for inventions under a traditional patent system for utility models ("inventions" related to shapes, structures or assemblage of articles), industrial designs and technovations (novel and industrially applicable arrangements of possibly traditional components in an assembly that results in a new solution to a technical problem. i.e. mostly production processes). KIPI is also in charge of registering trademarks and enforcing them. Violations of patents are criminal
offences susceptible to penalties of up to KSh50, 000 ($600) and/or imprisonment of no more than five and no less than three years (United Nations, 2005).

2.4 Effects of Organizations Capability on Technology Transfer

Phene, Madhok and Liu (2005) state that for organizations, technology transfer capabilities can form a competitive advantage if a firm is able to transfer knowledge at a faster rate within its boundaries than the speed at which it spills over to other firms. They further argue that a firm's ability to produce innovations based on its existing knowledge base essentially depends on the patterns of communication and distribution of knowledge within the firm.

Brown (2003) alludes that whereas classical diffusion theory focuses on the willingness to adopt, with technology diffusion, the more telling issue may be the adopters' ability to adopt. An organization's innovative capability is determined by its absorptive capabilities. This goes through the stages of its ability to recognize the value of new information, assimilate it and apply it to productive ends.

These are measured both at the organizational and individual levels, which are developed over time through investments in learning to enhance skill and knowledge. This can be seen as a potential source of competitive advantage for firms through the improvement of operational performance and in seizing market opportunities, engaging in alliances and being able to respond rapidly (Bjorkman, Stahl and Vaara, 2007).

As technology transfer involves the process of transmission and absorption of knowledge (Davenport and Prusak, 2000), the recipient’s firm ability to absorb the knowledge transferred depends on the degree of their absorptive capacity. Madanmohan et al. (2004) suggested that the extent of firm’s technology absorptive capacity will determine their level of participation in technology transfer process and the type of technology that they can operate efficiently. Since technology transfer involves cross border transfer of technology with the aim of enhancing the local technological capabilities, organizational capability will play a key role in the deployment, development and utilization of technological resources and its integration.
Cohen and Levinthal (1989) introduced the absorptive capacity as the firm’s ability to identify, assimilate and exploit knowledge from the environment. They argue that absorptive capacity depends greatly on prior related knowledge and diversity of background. They assume that a firm’s absorptive capacity tend to develop cumulatively and is depend on the absorptive capacity of its individual members. However, a firm’s absorptive capacity is not simply the sum of the absorptive capacities of its employees but also the organization’s ability to exploit information through transfers of knowledge across and within (Cohen and Levinthal, 1990). Furthermore, they focus on internal mechanisms whereby the structure of communication in transferring knowledge.

Omar et al. (2012) further state the organization capability does not only depend on employee knowledge and skills and the technical systems but also looks at the managerial systems, values and norms in an organization. Further indicating that to measure organizations capability three components must be looked at in terms of production performance, technological utilization and the firm’s capabilities in terms of tools, equipment and research tools. Due to the broad coverage of the production performance this research will be limited to technological utilization and issues surrounding the firm’s capabilities.

2.4.1 Type of Organization as Relates to Technology Transfer Capability
Types of organizations have enhanced technology transfer capabilities and on the flip side it also deterred this. Phene et al. (2005) eludes that multinationals whose presence in various areas across the global have the ability to leverage of knowledge in foreign markets as they provide access to new ideas and information that can be usefully applied elsewhere in the firm.

Subsidiaries also have the advantage in that in principle they have insider information, thus earlier access to development than other firms. The subsidiary benefits from the knowledge due to certain commonalities in routines which allows them to absorb the innovations faster and build on it (Phene et al., 2005).

2.4.2 Organizational Structure
Structure defines the specific role for each unit well as hierarchical relationships and coordination mechanism that ensures coherence of the organization as a whole. The
process of technology acquisition by developing countries is one of learning and improving their technological capability. This is a complex, long-term, process with various levels of technological competence such as the ability to use the technology, adapt it, stretch it, and eventually to become more independent by developing, designing and selling it. Barbosa and Vaidya, (1997) emphasizes that it very much relies on the effort of technology acquirer’s absorptive capacity, as a set of organizational practices and procedures to acquire, assimilate, transform and exploit external knowledge.

2.4.2.1 Management Process
Different organizations have different structure which do influence its operations and decision making speed. Organizations with long power distance tend to be slow in the adoption or transfer of technology. Huang and Rozelle (2002) found that policy makers and leaders commitment in keeping a strong confidence in investing in research systems shows the importance of technology and institutions that are involved in the creation, importation and spread of technological reforms. National cultures appear to be either individualistic or collectivistic while promoting the openness, the capacity of collaboration and the exchange of ideas and knowledge. For transfer to be effective the values of low power distance should be adopted to enhance social exchange between managers and their employees to enhance a fast adoption in change and thus increase rate of adoption of technologies (Rivera-Vazquez, Ortiz-Fournier and Flores, 2009).

Wu, Liang, Yu and Yang (2010) focus on the issues that result from interaction between technology management and the pace of transfer. The slow pace is as a result of absence of management attention as an agenda by top management, whose primary focus is on business issues. This leads to improper integrations, as managers lack appreciation of the relation between technology and organization. Organizations have various capabilities in enabling technological transfer. To facilitate this strategic planning for technology management must be embraced. This will relate to a set of development goals and programmes aimed at promotion of its technological management capabilities (Wu et al., 2010).
2.4.2.2 Organizational Culture and Influence on Technology Transfer

Social system heterogeneity is said to play a key role in the diffusion of technology, especially since as explained by Perkins and Neumayer (2005), learning is mainly through social interaction. If the people concerns are similar in some way, be it ethnically or by age then they are likely to exchange information easily and also imitate each other’s behaviour. Similarly the opposite stands and dissimilar societies reduce prospects of cross learning or emulation.

According to Björkman, Stahl and Vaara (2007), cultural differences have an effect on capability transfer through social integration and absorption capacity. Culture is defined as a way of life. Raymond (2007), states that most firms have difficulty transitioning from one phase of a technology value, to another because of strategy and related decision making. This may be improved by a clearer vision and clear perspective of the relevant technology value. He further observed that the failure by most organizations to innovate is due to what is called “Macro cultural homogeneity’ where industry waits for the other to innovate first.

Corporate culture and identity seem to determine how enterprises think about technological factors and integrate them into their strategy. Examples of agrochemical companies such as BASF whose recent campaign claimed to be energized by the “spirit of innovation” show that technology plays a vital role (Dussauge et al., 1997).

2.4.2.3 Learning Environment

Jabar, Soosay and Ricardo (2010) affirm that there are an increase in the alliances being formed aimed at adoption of new technologies and knowledge. These serve as organizational learning platforms and a vehicle of knowledge acquisition. These collaborations act as facilitators of learning and acquisition of new knowledge through internal development of new products. Such firms will acquire skills in technological capabilities through technological learning, resulting in innovation, operational efficiency and corporate adaptability. Leading to increases organizational capabilities and competitiveness this leads most firms in developing countries to engage in strategic trade alliances as a mode to increase their capabilities (Dao, 2009).
2.4.2.4 Human Resources and Technology Transfer

In looking at the technical utilization of technological transfer two variables are measured in relation to the labour force and the organization and its management. The labour force will look at issues surrounding the number and kind of labour force. Present in relation to the management team’s profession, skilled technical staff and skilled workers in an organization. While organization and management will look at issues surrounding procedures or policy that are used by the management to enable technological transfer (O’Connor, Roos and Willis, 2007). Shabir and Shabir (2010) suggest some of the factors that face technological transfer include a poor research culture, a wanting educational system, in addition to an incompetent technical labor. Equipping the population with the necessary skills that address these challenges is necessary to ensure a future that embraces innovation.

2.4.2.5 Employee Education and Motivation

Perkins and Neumayer (2005) infer that level of education is one key function that enables the diffusion of technology in a firm. They refer to a number of cross-country analyses reports that have observed a positive correlation between levels of educational attainment and diffusion success. Highlighting that well educated workers are more likely to be aware of the existence of a new technology and eventually profitably master the new technology.

Employees need to have combinations of skills that enable them to find, acquire, manage, share, and apply knowledge that the organization needs. The second element of absorptive capacity is the intensity of effort. Employees' intensity of effort is well understood by cognitive process theories, such as the expectancy theory of work motivation (Bjorkman, Stahl and Vaara, 2007). Overall, motivated employees want to contribute to organizational performance. Even though the organization may consist of individuals with significant learning abilities, the organization's ability to utilize the absorbed knowledge will be low if employee motivation is low or absent. Accordingly, both aspects of absorptive capacity ability and motivation of employees should be high in order to facilitate knowledge transfer (Minbaeva, 2007).

As technological transfer takes place, it is noted that technological capabilities increases, in any industry, organization or country. This is noted in four steps ranked as adoption,
adaption, enhancement and creation; also known as the ‘Technological Capability ladder’ (Glass and Saggi, 2002). As an organization moves up the ladder its technological complexity increases and the human skill required rises. Firms or countries that reach the creation levels become generators of new knowledge and are thus suppliers of technology rather than buyers (Gilbert et al., 2009).

In Kenya, through the federation of Kenyan employers that organization has made available funds to enhance the level of knowledge of employees by providing funds to employers to enable this. Many organizations have taken advantage of this to increase the skill base of its employees over the years. When it comes to motivation each organization has to work on their own incentive plans to enhance technological usage and expansion of its own capacity (Anupama, Anoop and Kun, 2005).

2.5 Chapter Summary
This chapter has established work on the issues arising from the questions and the literature review to establish the studies done on the issue of technology transfer and the effects it has. The literature review looked at issues surrounding the technology transfer models and zeroed in on the most commonly used model of foreign direct investment. It has also looked at the government and its role in enhancing the transfer of technology with a look at issues surrounding policy and global strategies surrounding intellectual property rights. It covered a summary of the different views of the studies that have been done in relation to the topic of technology transfer. Chapter three describes the methodology used in the study; this includes population, sample size and sampling techniques as well as methods of data collection and data analysis. The chapter also addressed the format in which the results were presented.
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction
This chapter described the methods and purpose used to carry out the research; it provided the research methodology used in this study. It discuss the research design used to hence the blue print of how this research was carried out. It also highlighted the population, sample, sampling technique and data collection technique that will be used in addition to the analysis and presentation methods.

3.2 Research Design
Research design is the contextual thinking process behind a given research problem. Research design carries along research questions, propositions, units of analysis, a logical link between data and propositions and criteria for interpreting findings (Mugenda and Mugenda, 1999). The choice of the research design applied in this study was guided by the fact that most of the questions need to address the issue at hand are of the type: who, what, where, how many and how much? In fact such questions do not require a control, because they are about contemporary events and so the research design adopted here is a case study (Cramb, 2002).

This survey was limited to Agrochemical companies based in Nairobi who are members of Agrochemical Association of Kenya as listed in the membership list of calendar year 2013. The approach provided a broad analysis of issues surrounding technology transfer as relates to simple elements. The study therefore engaged a descriptive research design to assess the importance of managing workforce diversity. In the study no attempt will be made to change or influence behaviour, attitudes, feelings, choice or conditions; things were measured as they were. The survey method was the most effective as a form of specific research in which information will be gathered for the acceptance or rejection of analysis (Hussey and Hussey, 1997). The study assessed the success of technology transfer in the agrochemical companies based in Nairobi as independent variable. The dependent variables included technology transfer models, government role in technology augmentation and organizational capabilities to advance technology transfer.
3.3 Population and Sampling Design

3.3.1 Population
Population is defined as the entire substance on which the measurement is being taken. Cooper and Schindler (2006). In this study the target population were Nairobi based members and affiliated member companies registered by the Agrochemical association of Kenya as listed in June 30th 2013. The target population of this study consisted of 58 companies on the AAK list as at July 2013, in each organization four people were considered leading to a total population of 232 respondents.

3.3.2 Sampling Design
3.3.2.1 Sampling Frame
A sampling frame is the list of elements from which the sample is drawn (Cooper and Schindler, 2006). The sampling frame for this study was a list of all member and associate companies registered with Agrochemical Association of Kenya as at 30th June 2013. This was obtained from AAK via email dated 2nd July 2013.

3.3.2.1 Sampling Technique
Systematic random sampling method was used in this study. Cooper and Schindler (2006) describes a systematic sampling is a statistical method involving the selection of elements from an ordered sampling frame. The researcher ensured that the chosen sampling interval does not hide a pattern. Any pattern would threaten randomness. Systematic sampling provides a good approximation to random sampling with a consistent gap maintained known as the sampling interval.

In this case due to the limited number of organizations the sampling interval gap of 5 companies. From AAK’s list, data was filtered to leave only companies based in Nairobi, full members are listed as 43 and associate members are listed as 15 of companies based in Nairobi. These were merged into one list and sorted to arrange alphabetically, with each company allocated a number ranging from 1 to 58, companies were selected at intervals of five resulting in a list of 11 companies. Each company selected was then issued with 4 questionnaires resulting in a target of 44 respondents (n=44) to be representative of Kenya’s accredited agrochemical firms based in Nairobi.
To manage the pattern the respondents were listed alphabetically and selected the intervals based on the listing without using a lottery method to determine the start. The start in this case was the start of the list as there was no chance of organizations coinciding with the alphabetic listing.

3.3.2.3 Sample Size
As explained by Coopers and Schindler (2006), this is the sample selected to be representative of the population. The size is representative of the population and the size should be manageable in relation to the resource and time available. To ensure accuracy of the information received only contact persons in the selected organizations were contacted to give feedback. This is with the assumption that they possess a good knowledge of the workings of the organization.

Table 3.1: Sample Size Distribution

<table>
<thead>
<tr>
<th>AAK Listing</th>
<th>No. of firms (N)</th>
<th>Sample(n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full members</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>Associate Member</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>Total number of firms</td>
<td>58</td>
<td>11</td>
</tr>
<tr>
<td>Number of respondents per organization</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Respondents Totals</td>
<td>231</td>
<td>44</td>
</tr>
</tbody>
</table>

The AAK list was thus arranged alphabetically to give order and the respondent companies selected using the systematic sampling approach. This sample size was determined in relation to the time and funds available and it was assumed to be a good sample size that gave precise feedback. The data was already stratified into Members and associate members and this stratification was not used.

3.4 Data Collection Methods
Primary data collection method was used in this study. Primary data was collected for a given specific research project undertaken (Saunders et al 2003). In this research the researcher collected primary data using questionnaires administered through telephone and emails to the company contact persons listed in the AAK listing. A total of 44 respondents were requested to participate in this research. This number in effect was 18.9% of firms the Nairobi based AAK registered member list 2013. Structured and open
ended questions were used in the questionnaires with an interview guide to enable data collection and define the purpose of the research. Open ended questions in this case allowed the respondents to give answers of their own bringing to light some issues that may have not been considered. Saunders et al (2003). While the structured questions in closed question format that lead to short, relevant answers that are easy to analyze.

3.5 Research Procedures
The design of the interview guide was done on the basis of the research questions. Pre-testing of the interview guide in the form of a questionnaire was administered to four respondents who were of a similar group to the study sample. The four respondents represented approximately 10% of the sample size, Saunders et.al., (2003). Also referred to as a pilot test, a pretest was a small-scale study to test a questionnaire or interview checklist, to minimize the likelihood of respondents having problems in answering the question and of data recording problems as well as to allow some assessment of the questions’ validity and the reliability of the data that was collected.

Pretesting was done one week before the actual study. After the pretest, the researcher reviewed and administered the questionnaire. An email was sent to each respondent and a call done later to administer the questionnaires because they are quick and affordable for the purpose of the study. When conducting the interviews the researcher called each respondent and spent an average of 15 minutes with each respondent in light of the earlier sent email to discuss the responses to the questions. Working with an average of 2 companies per day, the research spent one week collecting the data. Confidentiality was assured to all the respondents. A follow up on the emailed questionnaire was made within two days of submitting the questionnaires. Respondents who returned their questionnaires within the given period of time were promised a final copy of the research.

3.6 Data Analysis Methods
After collecting the raw data it was coded by assigning numbers and symbols to answers so that the responses could be grouped into a limited number of categories. Next editing was done to detect errors and omissions in the data and corrections made. Descriptive statistics, using frequencies, and percentages, were used in the analysis of demographic data while comparison means were used in analyzing and ranking the variables to show their significance levels. For ease of interpretation, the main data analysis tools used in
this study was Statistical Package for Social Sciences (SPSS). Data was presented in tabular and chart formats according to each research question.

3.7 Chapter Summary

This chapter discussed the methodology used in the collection of data. The research is on agrochemical companies based in Nairobi and the data collected is analyses using descriptive techniques. The research population comprises of the contact persons listed in the Agrochemical Association membership data as at 30th June 2013. Sampling was done using Systematic sampling technique. The data was presented in two levels as defined by their membership status, member companies and associate members; this dimension was adopted to improve representation. Data was collected through interviews conducted using an interview guide as the research tool. To begin with, a pilot test of the interview guide was done to confirm its clarity. The raw data was then coded, edited and analyzed using Excel spreadsheets and SPSS then presented in table and chart form. Consequently, detailed findings of the study were carried out based on the research proposal of this study. The results were obtained after analyzing responses to questions posed during interviews that were given to listed individuals in the selected companies in the AAK listing. The following chapter presents results and findings of the study.
CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction

This chapter addresses the results and findings on the analysis on the success of technology transfer in the agrochemical companies based in Nairobi. The findings are outlined according to specific objectives of the study. The findings are based on the responses from the questionnaires filled and information gathered of the research questions. The first research question was to determine the types of technology transfer models are in use mainly in agriculture. The second section provided responses on the role of the government in the augmentation of technology transfer. The third section examined the organizational capabilities advance technology transfer. Out of a targeted 44 respondents, 31 responded to the questionnaires. This represented an effective response rate of 70%. The findings are presented in Table 4.1.

Table 4.1: Response Rate

<table>
<thead>
<tr>
<th>Category</th>
<th>Target Respondents</th>
<th>Response</th>
<th>Response Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents</td>
<td>44</td>
<td>31</td>
<td>70%</td>
</tr>
<tr>
<td>Total</td>
<td>44</td>
<td>31</td>
<td>70%</td>
</tr>
</tbody>
</table>

4.2 General Information

The general information is organized in the following areas: type of organisation, your level in the organization, age brackets gender, availability of local research and development department and the factors motivate the selection of technology in your organisation.

4.2.1 Type of Organisation

The findings in Table 4.2 illustrated that 42% of the respondents were in multinational corporations, 39% of the respondents were in local organization, 7% of the respondents were in subsidiary and 13% in partnership. Therefore, the findings indicate that most of the respondents were in multinational corporations.
Table 4.2: Type of Organisation

<table>
<thead>
<tr>
<th>Type of Organisation</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multinational</td>
<td>13</td>
<td>42</td>
</tr>
<tr>
<td>Locally owned</td>
<td>12</td>
<td>39</td>
</tr>
<tr>
<td>Subsidiary</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Partnership</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>31</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

4.2.2 Level in the Organization

Table 4.3 indicated that 10% of the respondents were in top management, 31% of the respondents were in senior management, 26% were in middle management, 19% of the respondents were supervisors and 13% of the respondents were in non-managerial position. This indicates that majority of the respondents were in senior and middle management.

Table 4.3: Level in the Organization

<table>
<thead>
<tr>
<th>Level in the Organization</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Management</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Senior Management</td>
<td>10</td>
<td>32</td>
</tr>
<tr>
<td>Middle Management</td>
<td>8</td>
<td>26</td>
</tr>
<tr>
<td>Supervisors</td>
<td>6</td>
<td>19</td>
</tr>
<tr>
<td>Non Management</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>31</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

4.2.3 Age Brackets

The findings illustrated that 3% of the respondents were below 25 years, 7% were between 25 to 29 years, 45% between 30 to 39 years and another 45% of the respondents were between 40 to 49 years. Therefore, the findings indicate that most of the respondents were above 30 years. The findings are indicated on Table 4.4.

Table 4.4: Age Brackets

<table>
<thead>
<tr>
<th>Age Brackets</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;25</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>25-29</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>30-39</td>
<td>14</td>
<td>45</td>
</tr>
<tr>
<td>40-49</td>
<td>14</td>
<td>45</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>31</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
4.2.4 Gender of the Respondents
The findings illustrate that 65% of the respondents were male and 35% of the respondents were female. Thus, the findings indicate that majority of the respondents were male. The findings are indicated on Table 4.5.

Table 4.5: Gender of the Respondents

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>20</td>
<td>65</td>
</tr>
<tr>
<td>Female</td>
<td>11</td>
<td>35</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
<td>100</td>
</tr>
</tbody>
</table>

4.2.5 Local Research and Development
Table 4.6 indicated that 62% of the respondents agreed that there was local research and development as compared to 38% of the respondents who stated otherwise. This indicates that majority of the respondents agreed that they have a local research and development department.

Table 4.6: Local Research and Development

<table>
<thead>
<tr>
<th>Local Research and development</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>18</td>
<td>62</td>
</tr>
<tr>
<td>No</td>
<td>11</td>
<td>38</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>100</td>
</tr>
</tbody>
</table>

4.2.6 Factors of Technology Selection
Table 4.7 indicated that 40% of the respondents agreed that the factors motivating the selection of technology in the organisation were contingent on the profit opportunity, 53% were based on market opportunity and 7% of the respondents agreed that they value innovation by other partners. This indicates that majority of the respondents agreed that they were driven profit opportunity.

Table 4.7: Factors of Technology Selection

<table>
<thead>
<tr>
<th>Factors of technology selection</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit Opportunity</td>
<td>12</td>
<td>40</td>
</tr>
<tr>
<td>Market opportunity</td>
<td>16</td>
<td>53</td>
</tr>
<tr>
<td>Innovation by other partners</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>
4.3 Types of Technology Transfer Models in Use Mainly in Agriculture

The study aimed to determine the types of technology transfer models in use mainly in agriculture from the respondents involved in the study. The findings in Table 4.8 established that the organisation offers training to increase technological skill of the local workers (mean = 4.10). This was followed by the organisation having a locally based manufacturing plant (mean = 3.58), there was technology transfer through foreign affiliation (mean = 3.57) and the existence of multinationals to enhance adoption of technology at a mean of 3.56.

Few respondents agreed that their organisation have understudy programmes to replace expatriates at a mean of 2.61, a smaller number of the respondents agreed that their organisation always imports ready products at a mean of 2.23, fewer respondents agreed that locally owned companies are slow to adopt new technology at a mean of 2.21 and very few respondents agreed that locally owned companies do not innovate own technology at a mean of 1.94.

<table>
<thead>
<tr>
<th>Types of Technology Transfer Models in Use Mainly In Agriculture</th>
<th>Mean</th>
<th>Rankings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology transfer through foreign affiliation</td>
<td>3.57</td>
<td>3</td>
</tr>
<tr>
<td>Existence of multinationals enhance adoption of technology</td>
<td>3.56</td>
<td>4</td>
</tr>
<tr>
<td>Most products advancements are as a result of spill over effect</td>
<td>3.52</td>
<td>5</td>
</tr>
<tr>
<td>Locally owned companies are slow to adopt new technology</td>
<td>2.21</td>
<td>9</td>
</tr>
<tr>
<td>Locally owned companies do not innovate own technology</td>
<td>1.94</td>
<td>10</td>
</tr>
<tr>
<td>Expatriates in the industry necessitate technological advancement</td>
<td>3.06</td>
<td>6</td>
</tr>
<tr>
<td>My organisation has locally based manufacturing plant</td>
<td>3.58</td>
<td>2</td>
</tr>
<tr>
<td>My organisation always imports ready products</td>
<td>2.23</td>
<td>8</td>
</tr>
<tr>
<td>My organisation offers training to increase technological skill of the local workers</td>
<td>4.10</td>
<td>1</td>
</tr>
<tr>
<td>My organisation has understudy programmes to replace expatriates</td>
<td>2.61</td>
<td>7</td>
</tr>
</tbody>
</table>

4.3.1 Correlation between the Type of Organization and Technology Transfer Model

The findings indicate that there was a significant relationship between Multinational Corporation and the organisation offering training to increase technological skill of the local workers at \( r=0.685, \ r>0.01 \). There was also a significant relationship between Multinational Corporation and the organisation providing understudy programmes to replace expatriates at \( r=0.634, \ r>0.01 \). The findings are presented in Table 4.9.
<table>
<thead>
<tr>
<th>Technology Transfer Model</th>
<th>Type Of Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>My organisation offers training to increase technological</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>skill of the local workers</td>
<td>-.685**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>31</td>
</tr>
<tr>
<td>My organisation has understudy programmes to replace</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>expatriates</td>
<td>-.634**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>31</td>
</tr>
</tbody>
</table>

### 4.3.2 Regression on Technology Transfer Model

The study aimed to determine the type of organization and the type of transfer model. The general form of the regression equation is:

\[ Y' = a + bX \]

Where:

- \( Y' \) is the predicted value of the Y variable for a selected X value.
- \( a \) is the Y-intercept. It is the estimated value of Y when \( X = 0 \). In other words it is the estimated value of Y where the regression line crosses the Y-axis when X is zero.
- \( b \) is the slope of the line, or the average change in \( Y' \) for each change of one unit (either increase or decrease) in the independent variable X.

- \( X \) is any value of the independent variable that is selected.

For the case of this study, the regression will be as follows:

\[ Y' \text{ (TTM)} = a + b \text{OT} + b \text{UP} \]

**TTM** represents the Type of Technology Model

**OT** represents Organization Training

**UP** represents Understudy Programme

The findings in Table 4.10 indicate that there is a strong significant correlation between the two variables, type of organization and the type of technology transfer (\( r=0.878, p=0.000 \)). R square is 0.77 which implies that only 77% of the technology transfer model is determined by the type of the organization. In addition, with every unit in the transfer
of technology, the organization training increases by a margin of 0.593 units and understudy programme in the organization increases by 0.446 units.

The equation of regression line is:

**Type of Technology Model = 5.498+0.446UP+0T0.593**

### Table 4.10: Regression on Technology Transfer Model

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.878a</td>
<td>.770</td>
<td>.754</td>
<td>.502</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), OT

### Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>5.498</td>
<td>.398</td>
<td>13.811</td>
</tr>
<tr>
<td></td>
<td>UP</td>
<td>.446</td>
<td>.074</td>
<td>-.553</td>
</tr>
<tr>
<td></td>
<td>OT</td>
<td>.593</td>
<td>.089</td>
<td>-.612</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Type Of Organization

### 4.4 Role of the Government in the Augmentation of Technology Transfer

The study aimed to determine the role of the government in the augmentation of technology transfer from the respondents involved in the study. The findings in Table 4.11 established that the organisation works closely with the government to introduce new products at a mean of 3.97. This was followed by the awareness of the government policies surrounding technology transfer (mean=3.87), the organisation's inventions are protected by intellectual property rights (mean=3.85) and the labour laws support knowledge transfer from expatriates at a mean of 3.81.

Few respondents agreed that they are aware of the government infrastructure surrounding technology transfer in agrochemicals at a mean of 3.48, a small proportion of the respondents agreed that they have tax incentives for foreign direct investment that encourages technology transfer at a mean of 3.42, fewer respondents agreed that the government has invested resources to encourage technology transfer in agrochemical industry at a mean of 3.35 and very few respondents agreed that the government has offered organisation incentives to encourage technology transfer at a mean of 1.97.
Table 4.11: Role of the Government in the Augmentation of Technology Transfer

<table>
<thead>
<tr>
<th>Role of the Government in the Augmentation of Technology</th>
<th>Mean</th>
<th>Rankings</th>
</tr>
</thead>
<tbody>
<tr>
<td>The government has invested resources to encourage technology transfer in agrochemical industry</td>
<td>3.35</td>
<td>8</td>
</tr>
<tr>
<td>The government has measures to support intellectual property rights in the industry</td>
<td>3.61</td>
<td>5</td>
</tr>
<tr>
<td>The tax incentives for foreign direct investment encourages technology transfer</td>
<td>3.42</td>
<td>7</td>
</tr>
<tr>
<td>Kenya has labour laws that support knowledge transfer from expatriates</td>
<td>3.81</td>
<td>4</td>
</tr>
<tr>
<td>The government has offered my organisation incentives to encourage technology transfer</td>
<td>1.97</td>
<td>9</td>
</tr>
<tr>
<td>My organisation works closely with the government to introduce new products</td>
<td>3.97</td>
<td>1</td>
</tr>
<tr>
<td>My organisation's inventions are protected by intellectual property rights</td>
<td>3.85</td>
<td>3</td>
</tr>
<tr>
<td>Am aware of the government policies surrounding technology transfer</td>
<td>3.87</td>
<td>2</td>
</tr>
<tr>
<td>I am aware of the government infrastructure surrounding technology transfer in agrochemicals</td>
<td>3.48</td>
<td>6</td>
</tr>
</tbody>
</table>

4.4.1 Correlation between Organization and Government Role in Technology

The findings indicate that there was a significant relationship between Multinational Corporation and the Kenyan labour laws supporting knowledge transfer from expatriates at \( r=0.622, \ r>0.01 \). There was also a significant relationship between Multinational Corporation and the partnership with the government to introduce new products at \( r=0.729, \ r>0.01 \), the same applied to the protection of inventions by intellectual property rights at \( r=0.707, \ r>0.01 \) and awareness of the government policies surrounding technology transfer at \( r=0.461, \ r>0.01 \). The findings are presented in Table 4.12.

Table 4.12: Correlation between Organization and Government Roles in Technology

<table>
<thead>
<tr>
<th>Type Of Organization</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenya has labour laws that support knowledge transfer from expatriates</td>
<td>-.622 **</td>
<td>.000</td>
</tr>
<tr>
<td>My organisation works closely with the government to introduce new products</td>
<td>-.729 **</td>
<td>.000</td>
</tr>
<tr>
<td>My organisation's inventions are protected by intellectual property rights</td>
<td>-.707 **</td>
<td>.000</td>
</tr>
<tr>
<td>Am aware of the government policies surrounding technology transfer</td>
<td>-.461 **</td>
<td>.009</td>
</tr>
</tbody>
</table>

35
4.4.2 Regression on Government Role in Technology Transfer

The study aimed to determine the type of organization and the type of transfer model. The general form of the regression equation is:

\[ Y' = a + bX \]

Where:

- \( Y' \) is the predicted value of the Y variable for a selected X value.
- \( a \) is the Y-intercept. It is the estimated value of Y when X = 0. In other words, it is the estimated value of Y where the regression line crosses the Y-axis when X is zero.
- \( b \) is the slope of the line, or the average change in \( Y' \) for each change of one unit (either increase or decrease) in the independent variable X.
- X is any value of the independent variable that is selected.

For the case of this study, the regression will be as follows:

\[ Y' (TT) = a + b_{LL} + b_{IP} + b_{NP} + b_{GP} \]

- TTM represents the Technology Transfer
- LL represents Labour Laws
- IP represents Intellectual Property
- NP represents New Product
- GP represents Government Policies

The findings in Table 4.13 indicate that there is a strong significant correlation between the two variables, the role of the government and technology transfer (\( r=0.768, p=0.000 \)). R square is 0.59 which implies that only 59% of the technology transfer is determined by the government role in the transfer of technology. In addition, with every unit in the transfer of technology it supported by the labour laws by a margin of 0.272 units, inventions are protected by intellectual property rights by a margin of 0.737 units, introduction of new products by 0.960 units and awareness of government policies in supporting technology transfer increases by 0.446 units.
The equation of regression line is:

**Technology Transfer = 9.527 + 0.272LL + 0.737IP + 0.960NP + 0.007GP**

### Table 4.13: Regression on Government Role in Technology Transfer

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.768&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.590</td>
<td>.527</td>
<td>.698</td>
</tr>
</tbody>
</table>

*Predictors: (Constant), Am aware of the government policies surrounding technology transfer, My organisation's inventions are protected by intellectual property rights, Kenya has labour laws that support knowledge transfer from expatriates, My organisation works closely with the government to introduce new products.*

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>9.527</td>
<td>1.515</td>
<td>6.290</td>
</tr>
<tr>
<td></td>
<td>labour laws support knowledge transfer from expatriates</td>
<td>.272</td>
<td>.167</td>
<td>.216</td>
</tr>
<tr>
<td></td>
<td>Inventions are protected by intellectual property rights</td>
<td>.737</td>
<td>.491</td>
<td>.293</td>
</tr>
<tr>
<td></td>
<td>Introduction of new products</td>
<td>.960</td>
<td>.384</td>
<td>.519</td>
</tr>
<tr>
<td></td>
<td>Awareness of government policies</td>
<td>.007</td>
<td>.245</td>
<td>.005</td>
</tr>
</tbody>
</table>

*Dependent Variable: Type Of Organization*

### 4.5 Organizational Capabilities that Advance Technology Transfer

The study aimed to determine the organizational capabilities that advance technology transfer from the respondents involved in the study. The findings in Table 4.14 established that the most of the respondents agreed that the organisation plays a key role on its ability to adopt technology at a mean of 4.39. This was followed by the organisation structure playing a key role in the transfer of Knowledge at a mean of 4.32, a number of the multinationals have easy access to technology at a mean of (4.19) and employees level of education influences diffusion of technology at a mean of 3.87.

Few respondents agreed that they cultural differences have an effect on organisations ability to transfer foreign technology at a mean of 3.71, a small proportion of the respondents agreed that the management show attention to issues related to technology
transfer at a mean of 3.68, fewer respondents agreed that the strategic planning for technology transfer is part of the organisation's plan at a mean of 3.42 and very few respondents agreed that the employees in the organisation are motivated to embrace innovation at a mean of 3.29.

Table 4.14: Organizational Capabilities that Advance Technology Transfer

<table>
<thead>
<tr>
<th>The Impact of Organization Capability on the transfer of technology</th>
<th>Mean</th>
<th>Rankings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of organisation plays a key role on its ability to adopt technology</td>
<td>4.39</td>
<td>1</td>
</tr>
<tr>
<td>Multinationals unlike Local companies have easy access to technology</td>
<td>4.19</td>
<td>3</td>
</tr>
<tr>
<td>Organisation structure plays a key role in the transfer of Knowledge</td>
<td>4.32</td>
<td>2</td>
</tr>
<tr>
<td>Cultural differences have an effect on organisations ability to transfer foreign technology</td>
<td>3.71</td>
<td>7</td>
</tr>
<tr>
<td>Organisational collaboration acts as a facilitator of knowledge acquisition</td>
<td>3.85</td>
<td>5</td>
</tr>
<tr>
<td>Employees level of education influences diffusion of technology</td>
<td>3.87</td>
<td>4</td>
</tr>
<tr>
<td>Strategic planning for technology transfer is part of my organisation's plan</td>
<td>3.42</td>
<td>9</td>
</tr>
<tr>
<td>Our management show attention to issues related to technology transfer</td>
<td>3.68</td>
<td>8</td>
</tr>
<tr>
<td>Employees in my organisation are motivated to embrace innovation</td>
<td>3.29</td>
<td>10</td>
</tr>
<tr>
<td>In my organisation employees are often trained to build their technological capacity</td>
<td>3.77</td>
<td>6</td>
</tr>
</tbody>
</table>

4.5.1 Correlation between Organization Type Capabilities and Technology Transfer

The findings indicate that there was a significant relationship between Multinational Corporation and strategic planning for technology transfer plan at (r=0.704, r>0.01). The findings are illustrated in Table 4.15.

Table 4.15: Correlation between Organization and Technology Transfer Capability

<table>
<thead>
<tr>
<th>Type Of Organization</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic planning for technology transfer is part of my organisation's plan</td>
<td>.704**</td>
<td>.000</td>
<td>31</td>
</tr>
</tbody>
</table>
4.5.2 Regression on Organization Capabilities in Technology Transfer

The study aimed to determine the type of organization and its capabilities to transfer technology.

The general form of the regression equation is:

\[ Y' = a + bX \]

Where:

- \( Y' \) is the predicted value of the Y variable for a selected X value.
- \( a \) is the Y-intercept. It is the estimated value of Y when X = 0. In other words it is the estimated value of Y where the regression line crosses the Y-axis when X is zero.
- \( b \) is the slope of the line, or the average change in \( Y' \) for each change of one unit (either increase or decrease) in the independent variable X.
- \( X \) is any value of the independent variable that is selected.

For the case of this study, the regression will be as follows:

\[ Y' (TT) = a + bSP \]

**TT** represents the Technology Transfer

**OC** represents Strategic Planning

The findings in Table 4.16 indicate that there is a strong significant correlation between the two variables organization capabilities and technology transfer (\( r=0.704, p=0.000 \)). R square is 0.704 which implies that only 70.4% of the technology transfer is determined by organization capabilities. In addition, with every unit in the transfer of technology, strategic planning for technology transfer is part in the organisation's increased by a margin of 0.591 units.

The equation of regression line is:

**Technology Transfer = 3.924+0.591SP**
Table 4.16: Regression on Technology Transfer Model

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.704(a)</td>
<td>.495</td>
<td>.478</td>
<td>.731</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Strategic planning for technology transfer is part of my organisation's plan

<table>
<thead>
<tr>
<th>Coefficients(a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Type Of Organization

4.6 Chapter Summary

The findings indicate that the types of technology transfer models used in agriculture were that the organisation offers training to increase technological skill of the local workers. This was followed by the organisation having a locally based manufacturing plant; there was technology transfer through foreign affiliation and the existence of multinationals to enhance adoption of technology. However, many respondents disagreed with the point that locally companies do not innovate their own technology.

The findings established that the government works closely with organisation to introduce new products, followed by the awareness of the government policies surrounding technology transfer, the organisation's inventions are protected by intellectual property rights and the labour laws support knowledge transfer from expatriates. However, many respondents disagreed that the government offered incentives to encourage technology transfer.

The findings established that the most of the respondents agreed that the organisation plays a key role on its ability to adopt technology. This was followed by the organisation structure playing a key role in the transfer of knowledge, a number of the multinationals
have easy access to technology and employees level of education influences diffusion of technology. However, many respondents disagreed that the employees are motivated to embrace innovation.
CHAPTER FIVE

5.0 DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction
In this section, the researcher provides a discussion on the findings of the research as compared to the findings in the literature review, the summary of the study and recommendations for further improvement on identifying the measures on the success of technology transfer in the agrochemical companies based in Nairobi. The research is concluded on the basis of the conclusions drawn from the research questions.

5.2 Summary
The purpose of this study was to assess the success of technology transfer in the agrochemical companies based in Nairobi. The study was guided by the following research questions: What types of technology transfer models are in use mainly in agriculture? What is the role of the government in the augmentation of technology transfer? And which organizational capabilities advance technology transfer?

The methodology adopted during the study was in form of a descriptive design whereby the respondents were asked their opinions on different aspects of technology transfer. The target population of this study consisted of 58 companies on the AAK list as at July 2013, in each organization four people were considered leading to a total population of 232 respondents. A random sampling method known as systematic sampling technique was used to select the sample of 11 companies consisting of 44 respondents. Data was collected by conducting structured questionnaires to explore all relevant issues. The data was then analyzed using descriptive statistics and the variables described by means as the output of the data was presented in tables and figures. The main data analysis tools used in this study was the Statistical Package for Social Sciences (SPSS).

The findings indicated that the types of technology transfer models used in agriculture were that the organisation offers training to increase technological skill of the local workers. This was followed by the organisation having a locally based manufacturing plant; there was technology transfer through foreign affiliation and the existence of multinationals to enhance adoption of technology. However, many respondents disagreed with the point that locally companies do not innovate their own technology.
The findings established that the government works closely with organization to introduce new products, followed by the awareness of the government policies surrounding technology transfer, the organisation's inventions are protected by intellectual property rights and the labour laws support knowledge transfer from expatriates. However, many respondents disagreed that the government offered incentives to encourage technology transfer.

The findings established that the most of the respondents agreed that the organisation plays a key role on its ability to adopt technology. This was followed by the organisation structure playing a key role in the transfer of knowledge, a number of the multinationals have easy access to technology and employees level of education influences diffusion of technology. However, many respondents disagreed that the employees are motivated to embrace innovation.

5.3 Discussion
5.3.1 Types of Technology Transfer Models in Use Mainly in Agriculture
Promoting technology and technological innovation requires intensive training. The findings established that the organisation offers training to increase technological skill of the local workers (mean = 4.10). Similarly, Perkins and Neumayer (2005) infer that level of education is one key function that enables the diffusion of technology in a firm. Advanced training of personnel increases the capacity of local firms to be able to identify and assimilate existing knowledge to increase competiveness.

Technology transfer is vital in enhancing an organization capacity to sustain a competitive agricultural sector. The findings established that the organisation having a locally based manufacturing plant (mean = 3.58). Having a locally based manufacturing plant maintains organizational, industry and country competitiveness in their sector. This is consistent with Cohen and Leviathal (1990) study that suggests that local organizations can have absorption capacity to assimilate and apply technology to its productive ends. Ramanathan (2000) adds that without local manufacturing, the industry resolves to high dependency of foreign supplies.
Glass and Saggai (2002) posit that foreign direct investment is one of the most preferred channels through which technology can be transferred. The findings established that there was technology transfer through foreign affiliation (mean = 3.57). This encourages multinationals to establish local production facilities in the host country and transfer is generally obtained through imitation. The findings established that there was the existence of multinationals to enhance adoption of technology at a mean of 3.56. Phene et al (2005) argues that multinationals whose presence in various areas global have the ability to leverage of knowledge in foreign markets as they provide access to new ideas and information that can be usefully applied elsewhere in the firm.

Technological transfers have taken place mostly through transfers of managerial skills and processes. Few respondents agreed that their organisation have understudy programmes to replace expatriates at a mean of 2.61. The Kenya Government imposes an understudy programme for each expatriate employee recruited by foreign investors, with the aim of replacing the expatriate with a Kenyan employee in the medium term. This has enforced the transfer of knowledge by multinationals and other foreign firms to the local firms. However certain foreign firms have often gone beyond the legal requirements and provided training to their employees on a wider basis. Many give a high level of responsibility to local staff by providing ongoing training programmes in order to allow them to occupy top management positions.

Most of the chemicals used in this sector are imported as ready products from either the West or the East. A smaller number of the respondents agreed that their organisation always imports ready products at a mean of 2.23. Sometimes the importation of readymade products does not result in technological transfer as the formulation of the agrochemicals used is done from the global head quarters (Ojwang, 1992). In other cases, the local government agency PCPB can check for adaptability, with little or no extra work done to the products.

Different organizations have different structure which do influence its operations and decision making speed. Fewer respondents agreed that locally owned companies are slow to adopt new technology at a mean of 2.21. It seems that most organizations have shorter power distance to adopt the transfer of technology. Huang and Rozelle (2002) found that policy makers and leaders commitment in keeping a strong confidence in investing in
research systems shows the importance of technology and institutions that are involved in the creation, importation and spread of technological reforms.

Innovation is of great importance to ensure competitive advantage is maintained in agriculture sector. Very few respondents agreed that locally owned companies do not innovate own technology at a mean of 1.94. It seems that local companies inevitable have to innovate to ensure future sustainability and enable technology transfer. This contradicts Raymond (2007) argument that most firms have difficulty transitioning from one phase of a technology value, to another because of strategy and related decision making. This may be improved by a clearer vision and clear perspective of the relevant technology value.

5.3.2 Role of the Government in the Augmentation of Technology Transfer

The government plays a great role in enhancing the transfer of technology. The findings established that the organisation works closely with the government to introduce new products at a mean of 3.97. Public and private partnership is of great importance in ensuring competitive advantage though the transfer of technology. For this to occur, the government must play its role in ensuring there is adequate support in the industries operating environments (Ramanathan, 2000).

Government policies are of great importance to enhance technological transfer. The findings established that there was awareness of the government policies surrounding technology transfer (mean=3.87). Without government policies in technology transfer it would result to high dependency of foreign supplies (Ramanathan, 2000). Ramanathan (2000) argues that government support in terms of providing the infrastructure and institutional support are of great importance to enhance technological transfer. The government policies govern foreign firms and also encourage local or domestic firms seeking to adopt technology.

Intellectual property rights are an incentive that protects organization inventions for any organization willing to utilize a technology. The findings established that the organisation's inventions are protected by intellectual property rights (mean=3.85). Naghavi (2007) submits that a weak intellectual property right among other factors deters nations from transferring technology from abroad. Protection of intellectual property
rights (IPR) has been an issue of interest in both industrialized and developing countries. Intellectual property rights prevent the innovator of technology from making losses through the infringement of their property rights.

In looking at the technical utilization of technological transfer two variables are measured in relation to the labour force and the organization and its management. The labour force will look at issues surrounding the number and kind of labour force. Present in relation to the management team’s profession, skilled technical staff and skilled workers in an organization. While organization and management will look at issues surrounding procedures or policy that are used by the management to enable technological transfer. (Omar et al 2012)

Equipping the population with the necessary skills that address these challenges of technology gap is necessary to ensure a future that embraces innovation. The findings established that the labour laws support knowledge transfer from expatriates at a mean of 3.81. Shabir and Shabir (2010) suggest that the labour laws create a supportive culture for technological transfer, establish a wanting educational system and the technical competent of the labor force. Labour legislation creates incentives and intellectual property rights to adequately promote innovation in this industry (UN, 2005). However, few respondents agreed that they are aware of the government infrastructure surrounding technology transfer in agrochemicals at a mean of 3.48.

Taxation laws have been used in attracting foreign direct investment that has resulted in technology spill over to the local firms. A small proportion of the respondents agreed that they have tax incentives for foreign direct investment that encourages technology transfer at a mean of (3.42). To attract FDI and hence technology transfer, there has to be a wide incentive for businesses through tax holidays, tax credits, investment allowances and reinvestment allowances. Other avenues include exemption from withholding taxes, import tariffs, export tariffs, export duties just to mention a few (Long, 2005).

Fewer respondents agreed that the government has invested resources to encourage technology transfer in agrochemical industry at a mean of (3.35). Government support can facilitate transfer or acquisition of technologies (Ojwang, 1992). Very few respondents also agreed that the government has offered organisation incentives to
encourage technology transfer at a mean of (1.97). This is a worrying fact that the government does not adequately promote innovation in this industry as little development will result.

5.3.3 Organizational Capabilities that Advance Technology Transfer

Sufficient technology can be realized when an organization enhances its capability to handle complex technical process to the point of creation of technologies and adoption. The findings established that the most of the respondents agreed that the organisation plays a key role on its ability to adopt technology at a mean of 4.39. The organisation role in enhancing its ability to adopt technology leads to technological advancements. Ramanathan (2000) agrees that the management support and incentive systems encourage learning and assimilation of new technologies.

The organization structure defines the specific role for each unit well as hierarchical relationships and coordination mechanism that ensures coherence of the organization as a whole. The findings established that the organisation structure playing a key role in the transfer of knowledge at a mean of 4.32. This organization structure plays a long-term role for an organization to adapt technology, stretch it, and eventually to become more independent by developing, designing and selling it. Barbosa and Vaidya, (1997) emphasizes that this very much relies on the effort of technology acquirer’s absorptive capacity, as a set of organizational practices and procedures to acquire, assimilate, transform and exploit external knowledge.

Corporate culture and identity seem to determine how enterprises think about technological factors and integrate them into their strategy (Dussauge et al., 1997). The findings established that a number of the multinationals have easy access to technology at a mean of (4.19). Jabar et al. (2010) argues that such firms will acquire skills in technological capabilities through technological learning, resulting in innovation, operational efficiency and corporate adaptability. With multinationals leading in terms organizational capabilities and competitiveness, this makes local firms in developing countries to engage in strategic trade alliances as a mode to increase their capabilities also.
Perkins and Neumayer (2005) infer that level of education is one key function that enables the diffusion of technology in a firm. The findings established that the employees level of education influences diffusion of technology at a mean of 3.87. Perkins and Neumayer (2005) confirm that there is a positive correlation between levels of educational attainment and diffusion success. This means that well educated workers are more likely to be aware of the existence of a new technology and eventually profitably master the new technology.

National cultures appear to promoting the openness and the capacity to collaborate and exchange of ideas and knowledge. Few respondents agreed that they cultural differences have an effect on organisations ability to transfer foreign technology at a mean of 3.71, Employees need to have combinations of skills that enable them to find, acquire, manage, share, and apply knowledge that the organization needs. Overall, motivated employees want to contribute to organizational performance. Even though the organization may consist of individuals with significant learning abilities, the organization's ability to utilize the absorbed knowledge will be low if employee motivation is low or absent (Minbaeva 2007).

For transfer to be effective the values of low power distance should be adopted to enhance social exchange between managers and their employees to enhance a fast adoption in change and thus increase rate of adoption of technologies. A small proportion of the respondents agreed that the management show attention to issues related to technology transfer at a mean of 3.68. Rivera-Vazquez, Ortiz-Fournier and Flores (2009) argue that the management team’s profession, skilled technical staff and skilled workers should look at issues surrounding procedures or policy to enable technological transfer (Omar et al. 2012). However, very few respondents agreed that the employees in the organisation are motivated to embrace innovation at a mean of 3.29.

The concept of strategic planning for technology within organizations is of great importance, as it recognizes the need to integrate business and technology. Fewer respondents agreed that the strategic planning for technology transfer is part of the organisation's plan at a mean of 3.42. Considering the high cost of research and development to most companies, a fundamental part of technology management is in the selection of the vehicle for acquiring the technology. The findings match Trott (2008)
arguments that the organization policy enhances the capacity of workers to facilitate technology transfer.

5.4 Conclusions

5.4.1 Types of Technology Transfer Models in Use Mainly in Agriculture

Promoting technology and technological innovation requires intensive training. Technology transfer is vital in enhancing an organization capacity to sustain a competitive agricultural sector. Foreign direct investment is one of the most preferred channels through which technology can be transferred. Technological transfers have taken place mostly through transfers of managerial skills and processes. The importation of readymade products does not result in technological transfer as the formulation of the agrochemicals used is done from the global head quarters. Different organizations have different structure which do influence its operations and decision making speed. Innovation is of great importance to ensure competitive advantage is maintained in agriculture sector.

5.4.2 Role of the Government in the Augmentation of Technology Transfer

The government plays a great role in enhancing the transfer of technology. Government policies are of great importance to enhance technological transfer. Intellectual property rights are an incentive that protects organization inventions for any organization willing to utilize a technology. Equipping the population with the necessary skills that address these challenges of technology gap is necessary to ensure a future that embraces innovation. Taxation laws have been used in attracting foreign direct investment that has resulted in technology spill over to the local firms. Government support can facilitate transfer or acquisition of technologies.

5.4.3 Organizational Capabilities that Advance Technology Transfer

Sufficient technology can be realized when an organization enhances its capability to handle complex technical process to the point of creation of technologies and adoption. The organization structure defines the specific role for each unit well as hierarchical relationships and coordination mechanism that ensures coherence of the organization as a whole. Corporate culture and identity seem to determine how enterprises think about technological factors and integrate them into their strategy well educated workers are
more likely to be aware of the existence of a new technology and eventually profitably master the new technology. National cultures appear to promoting the openness and the capacity to collaborate and exchange of ideas and knowledge. The organization policy enhances the capacity of workers to facilitate technology transfer.

5.5 Recommendations

5.5.1 Recommendation for Improvement

5.5.1.1 Types of Technology Transfer Models in Use Mainly in Agriculture
The study recommends that there should be intensive training in promoting technology and technological innovation. Technology transfer should be essential in sustaining a competitive agricultural sector. Foreign direct investment should be encouraged to transfer technology. Managerial skills and processes are vital in transferring technology. Local manufacturing leads to the formulation and adoption of technology. The organization structure should influence the operations and speedy decisions in technology transfer. Innovation should be of great importance to ensure competitive advantage in the agriculture sector.

5.5.1.2 Role of the Government in the Augmentation of Technology Transfer
The government should play a vital role in enhancing the transfer of technology. Government policies should create incentive that protects organization inventions for any organization willing to utilize a technology. Equipping the population with the necessary skills is important in addressing technology gap where necessary to ensure a future that embraces innovation. Taxation laws should be used in attracting foreign direct investment to result in technology spill over. Government support should facilitate transfer or acquisition of technologies.

5.5.1.3 Organizational Capabilities that Advance Technology Transfer
An organization should enhance its capability to handle complex technical process to the point of creation of technologies and adoption. The organization structure should define specific role to ensure coherence of the organization as a whole. Corporate culture should be identified to influence the direction of the organization to think about technological factors. Workers should be well educated to adopt new technology and eventually profitably master the new technology. National cultures should promote the openness and
the capacity to collaborate and exchange of ideas. Organization policy should enhance the capacity of workers to facilitate technology transfer.

5.5.2 Recommendations for Further Studies
Since, the current analyzed the success of technology transfer in the agrochemical companies as the dependent variable against the types of technology transfer models, the role of the government in the augmentation of technology transfer and the organizational capabilities advance technology transfer (Independent variable), the findings could not adequately indicate the correlation and regression between the variables in this study. Therefore, the study suggests that future researchers could use T-test to show the relationship between the variables to confirm the similarities of the findings.
REFERENCES


C/o. United States International University (USIU)

P. O. Box 1025

NAIROBI

12th July 2013

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: QUESTIONNAIRE – Technology transfer

I am currently a graduate student at United States International University (USIU) pursuing a Masters in Business Administration Degree. As part of the study I have designed a questionnaire to gather information on technology transfer, in the agrochemical industries using Nairobi based companies as the basis of the study.

This study is in partial fulfilment of the requirements of the Masters in Business Administration Degree at USIU. Please note that any information you give will be treated as strictly confidential and at no instance will it be used for any other purpose other than for academics intention.

Your participation will be highly appreciated. I look forward to your prompt response.

Thank you.

Yours faithfully,

Elizabeth A. Mranda

STUDENT ID.NO.629717
APPENDIX II: QUESTIONNAIRE

PART A: GENERAL INFORMATION

(Please provide your responses to below questions by filling out √ where applicable)

(i) **Type of organisation**
   - (a) Multinational ☐
   - (b) Locally owned ☐
   - (c) Subsidiary ☐
   - (d) Partnership ☐
   - (e) Other ☐

(ii) **Your level in the organization**
   - (a) Top Management ☐
   - (b) Senior Management ☐
   - (c) Middle Management ☐
   - (d) Supervisors ☐
   - (e) Non Managers ☐

(iii) **Age Brackets (Years)**
   - (a) < 25 ☐
   - (b) 25 - 29 ☐
   - (c) 30 - 39 ☐
   - (d) 40 – 49 ☐
   - (e) > 50 ☐

(iv) **Gender**
   - (a) Male ☐
   - (b) Female ☐

PART B: INTRODUCTION OF STRATEGY IMPLEMENTATION

Technology transfer is one of the strategies that have been adopted by various organizations as a source of competitive advantage and for organizational sustainability. It involves cross border transfer of technology with the aim of enhancing technological capabilities. It is defined as an organization’s ability to source, adapt and adopt the technological advancements already in use by other organizations.

(Please provide your response to the question below by filling out √ where applicable)

(v) **Does your organisation have a local research and development department?**
   - (a) Yes ☐
   - (b) No ☐

(vi) **What factors motivate the selection of technology in your organisation**
   - (a) Profit opportunity ☐
   - (b) Market opportunity ☐
   - (c) Low cost ☐
   - (d) Innovation by other partners ☐
   - (e) Invitation by government ☐
PART C: TYPES OF TECHNOLOGY TRANSFER MODELS

Indicate the extent to which you agree with the following statements by using a scale of 1 to 4 where 1 = Strongly Disagree and 4 is Strongly Agree. Circle (O) which best describes your opinion of the statement in reference to the effects of organizational structure on strategy implementation.

<table>
<thead>
<tr>
<th>Most used models in agricultural technology transfer is foreign direct investment (FDI).</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Not Sure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Organisations obtain technological advancement through affiliation by foreign organisations.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>The existence of multinationals in this industry has enhanced the use and adoption of technology</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Most product advancements in the industry has been as a result of spill over from foreign owned companies</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>Locally owned companies are slow to adopt new technological advancements.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Locally owned companies do not innovate own technology</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>Expatriates in the industry necessitate technological advancements</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>My organisation has a locally based manufacturing plant</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>My organisation always imports ready products</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>My organisation offers training to increase technological skill the local workers.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>My organisation has understudy programmes with the aim to replace the expatriate with a local employee</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

11. To what extent does the type organisation encourage the transfer of technology
PART D: ROLE OF GOVERNMENT IN TECHNOLOGY TRANSFER

Indicate the extent to which you agree with the following statements by using a scale of 1 to 4 where 1 = Strongly Disagree and 4 is Strongly Agree. Circle (O) which best describes your opinion of the statement in reference to the role of the government in boosting technology transfer.

<table>
<thead>
<tr>
<th>The role of Government in enhancing technology transfer</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Not Sure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 The government has invested resources to encourage technology transfer in the agrochemical industry</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2 The government has measures to support intellectual property rights in the industry</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3 The tax incentives for foreign direct investment encourage technology transfer.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4 Kenya has labour laws that support knowledge transfer from expatriates.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5 The government has offered my organisation incentives to encourage technology transfer.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6 My organisation works closely with the government to when introducing new products</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7 My organisations inventions are protected by intellectual property rights</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8 I am aware of the government policies surrounding technology transfer in my industry</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9 I am aware of the governments infrastructure surrounding technology transfer in agrochemicals</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10 What in your opinion is the role played by the government to encourage technology transfer in the agrochemical industry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

__________________________________________________________________

__________________________________________________________________

58
PART E: ORGANIZATIONAL CAPABILITIES THAT ADVANCE TECHNOLOGY TRANSFER

Indicate the extent to which you agree with the following statements by using a scale of 1 to 4 where 1 = Strongly Disagree and 4 is Strongly Agree. Circle (O) which best describes your opinion of the statement in reference to the effects of organizational Capability in relation to technology transfer.

<table>
<thead>
<tr>
<th>The Impact of Organization Capability on the transfer of technology</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Not Sure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 The type of an organisation plays a key role on its ability to adopt technology</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Multinationals unlike local companies have easy access to technology</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Organisation structure play a key role in the transfer of knowledge</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Cultural differences have an effect on organisations ability to transfer foreign technology</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Organisational collaboration acts as a facilitator of knowledge acquisition</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Employees educational level influences diffusion of technology</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Strategic planning for technological transfer is part of my organisations plan.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Our management show attention to issues related to technology transfer</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Employees in my organisation are motivated to embrace innovation</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 In my organisations employees are often trained to build their technological capacity</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. From your point of view, has your organisation been allocated enough resources to increase its capability to ensure successful transfer of technology?

__________________________________________________________________________

__________________________________________________________________________

Thank you for your participation