

## **EFFECT OF TECHNOLOGY TRANSFER ON MULTINATIONAL COMPANY SUBSIDIARY PERFORMANCE; A CASE OF STANDARD BANK GROUP IN KENYA**

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**Abstract:** *The world is becoming more and more global and to be successful, many companies have to compete on the global playing field. This globalization of companies is making it more important than ever to understand how multinational enterprises can operate more effectively. This study sought to establish the effect of expatriate knowledge transfer on multinational companies' subsidiary performance with a specific objective to establish the extent to which the transfer of technology and innovation through expatriate programs impacts on performance of subsidiaries of Multi-National Corporations.*

**Methodology:** *This research was conducted through a case study since it is a research on one organization. The target population was employees in Standard Bank Group in Kenya operating as Stanbic Bank Kenya Limited. The study sampled 30% of the population of the study using stratified proportionate random sampling. The study collected primary data through self-administered questionnaire and interview guides.*

**Findings:** *The study established that technological innovation transfer impacts multinational corporation subsidiary performance to a great extent. The study also indicated that technological innovation transfer factors that influenced performance of MNCs subsidiaries to a very great extent include new system; design of new process to for production and service delivery; new equipment and embracement of market technologies to enable the firm to relate its products and services to other firms' requirements and to their technologies. Technological transfer therefore results in substantial growth in the productivity of existing factors.*

**Keywords:** *Expatriate Programs, Multi-National Corporations, Technological Innovation Transfer*

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### **Introduction and Background**

Technological innovation by expatriates from mother companies to subsidiary is referred to as international technology transfer. It involves transfer of technology from the place of introduction to other markets around the world. International technology transfer is generally recognized as having played an important role in the industrial development of those countries that successfully achieved industrial development during the second half of the 20th century. An appropriate technology transfer policy, assisted by a good political frame-work and business conditions, contributed to competitiveness in domestic and international markets worldwide, while also contributing to the attainment of a global sustainable industrial development (Miyake, 2005).

Commander et al., (2006) mention the importance expatriate programs as an effective way of ensuring technology transfer. Technological knowledge transfer in the context of MNCs has gained much significance (Hansen & Lovas, 2008). Unlike in the past when technology was considered in terms of tangible objects like working machinery and artifacts, giving little significance to knowledge related aspects. Technology is much more than machinery for it involves the practical application of scientific knowledge that is codified and easily

accessible in addition to nonscientific knowledge that may be embedded in the culture of society or company, group, worker or inventor tasks. Technologies are described under three categories; product, process and market technologies. Product technologies that include firm's abilities to design particular types of products or services and embedded in staffs that know how to perform such design works while process technologies are what a firm uses to manufacture or to produce particular products or services and market technologies enable a firm to relate its products and services to other firms' requirements and to their technologies. Market technologies also include skills needed to manage firms' relationships with other companies (Ford & Saren, 2007).

Ford and Saren (2007) highlights that technology is a fundamental competitive advantage of firms in business today. For creation of new products to knowledge market or industrial processes, technology plays a major role in the success of both domestic and transnational firms. Further, technology is an important base for economic growth and development, so government need to pursue policies that optimise its creation and use. Therefore, technological transfer is an important aspect of expatriate programs in knowledge transfer in multinational companies. It is becoming increasingly apparent that in many countries innovation becomes a central theme of national development. The emergence of innovation-driven economy brings changes in public policy such as public sector reform, education reform, and privatization. This also stimulates increased relationships and interactions among knowledge producers, transfer agents, and knowledge users (Jacob et al., 2007).

Adeolu and Obafemi (2007) refer to mainly three types of technological transfer; product transfer – knowledge in productions of certain products, the knowledge that specifies products characteristics and uses; process technology – the knowledge in production to organise inputs and operate machinery, it relates to the process by which goods and services are produced; finally, there is management technology – knowledge in operating business.

For technology-based companies, more and more skilful engineering professionals are required to expatriate to foreign technology-advanced companies for technology transfer purpose. And many engineers combined with the university teachers innovations. Past research on the technology transfer mainly focused on factors influenced the results related issues, which are quite different from the problems faced by technology receivers. To improve the technology transfer performances, nearly a third of the nation's governors have called on legislatures to increase expatriate technology transfer programs. Technology transfer is such a concept that is absolutely broader than the acquisition of physical assets. The exchange of technology and know-how between firms, in fact, should contain the exchange of both resources and competence of two organizations (Lynskey, 2009). Lynskey indicates that the nature of knowledge that is, transferability and transparency, involved in technology transfer will become influential factors for success of the process. The transferability of knowledge refers to the extent to which knowledge can be transferred. If the knowledge is tacit, it is more difficult to share implicit or to transfer only through coded signs and symbols. Thus, if more tacit knowledge is involved in the technology transfer process, it is apparent that professional expatriates should try to spend more time with the technology group, to understand the norms in their organizations, or even build good relationships with the key persons in the donor firm. The transparency of knowledge is defined as the willingness or openness of a donor firm to release information and to explain difficult issues to the recipient firm. It is apparent that the more openness of the donor firm will be favourable for the transfer of technology. Besides, some superior information or know-how is still conveyed through intensive interactions among people, the process may be iterative, requiring additional interpersonal contact.

Technology transfer may increase the physical stock of productive factors (resources) available. Such factors include expatriate personnel rendering technology services or holding key managerial posts in local companies, imported machinery and equipment, foreign raw materials, components and parts not available in the host country and accompanying technology transfer contracts. The increase in question may be short term (e.g. the temporary employment of foreign experts) or long term. Foreign technology may contribute to this increase by exploiting existing resources. As an example, it may generate new job opportunities for previously unemployed labour, decrease idle capacity in some sectors for the economy, or extend arable land for new crops. Cases may also be included in this category where the technology transfer is able to exploit local resources that had been idle owing, for example, to the weakness of indigenous entrepreneurship or its limited technical capabilities (Lee et al., 2007).

Transfer of foreign technology may result in substantial growth in the productivity of existing factors (labour, capital and natural resources, including land) by (a) increasing the volume of outputs while the volume of inputs remains unchanged or (b) decreasing the volume of input while the volume of output stays the same. However, the challenge is not just to increase productivity or utilize technology in the short run. The real challenge is to bring about technological change and to catch up. If this is not achieved, the gap between the technology importer and the world technology frontier will wider (Laroche & Amara, 2011).

Technology transfer may have a wide-ranging impact on the countries that receive the technology. Generally speaking, technology imports increase the available stock of technological and managerial knowledge, and may help to increase people's living standards and the country's competitiveness. Technology transfer may play a similar role in enhancing the economic development of developing countries and in improving the competitiveness of their firms in international markets, if it is used as a learning device and if it interacts effectively with domestic technology efforts (Bozeman, 2006).

However, MNCs can have a negative impact on the direct transfer of technology to the FOEs and thereby reduce the spillover from FDI in the host country in several ways. They can provide their affiliate with too few or the wrong kind of technological capabilities, or even limit access to the technology of the parent company. The transfer of technology can be prevented if it is not consistent with the MNC's profit maximizing objective and if the cost of preventing the transfer is low. Consequently, the production of its affiliates could be restricted to low-level activities and the scope for technical change and technological learning within the affiliate reduced (Adeolu & Obafemi, 2007).

### **Standard Bank Group**

The Standard bank was formed in 1862 as a South African subsidiary of the British overseas bank Standard Bank under the name Standard Bank of South Africa. The British bank's history in South Africa dated back to 1862, when a group of businessmen led by John Paterson formed the bank in London, initially under the name Standard Bank of British South Africa. The bank started operations in 1863 in Port Elizabeth, South Africa, and soon after opening it merged with several other banks including the Commercial bank of Port Elizabeth, the Colesberg Bank, the British Kaffrarian Bank and the Fauresmith Bank.

It was prominent in financing and development of the minerals in South Africa in the early years. To date the Standard Bank Group is the largest African Bank by assets and earnings. Standard Bank currently operates in 18 countries on the African continent, including South Africa, as well as in other selected emerging markets. The banks operation is spread far and wide including Europe and Asia.

The Standard Bank Group is organized in three main pillars of business, Personal and Business Banking, Corporate and Investment Banking and Wealth. The bank boasts of 1248 branches round the world serviced by a staff complement of more than 49,000 people across all geographies. The Group is franchised in other parts of Africa under the name of Stanbic with very strong East African presence in Kenya, South Sudan, Uganda and Tanzania.

### **Statement of the Problem**

Many organization lament over the cost incurred to support expatriate programmes. It is estimated that between 20% and 50% of employees leave the corporation within one year of expatriation (Yeaton & Hall, 2008). Further, the transfer of knowledge is impeded by the expatriates and host country nationals not forming a positive relationship due to cultural backgrounds differences. Cabrera and Cabrera (2005) argued that the expatriates attitudes towards knowledge sharing is directly related to intentions to share knowledge and consequently to knowledge sharing behaviors. This, as noted by Cabrera and Cabrera (2005) is as a result of low motivation among the expatriates. Gupta and Govindarajan (2000) expatriate knowledge transfer is further hindered by absorptive capacity, which is the ability to recognize the value of external knowledge, assimilate it, and applies it to subsidiary operations to produce value.

Despite the obvious importance to overcome the negative personal qualities dictated by cultural, intelligence and networking behaviors to foster an environment to enhance knowledge transfer, little research has been done on this area. Existing researches like Jensen and Szulanski, (2004), Riusala and Smale, (2007); Wang, Tong, Chen, and Kim, (2009) shows that knowledge transfer research generally takes a macro lens by focusing on organizational systems and processes leaving out personal qualities and organizational practices which enhances expatriate-host country nationals' social capital that is instrumental to knowledge transfer.

It is therefore in that light that this study sought to establish the extent expatriate programs in specific reference to technology innovation transfer, professional know-how training, managerial know-how application, and enhancing the organizational identity influences multinational companies' subsidiary performance.

### **Objectives of the Study**

The general objective of the study was to establish the effect of expatriate knowledge transfer on multinational companies' subsidiary performance and was guided by finding out the effect of technology transfer on multinational company subsidiary performance; a case of standard bank group.

### **Research Methodology**

This research was conducted through a case study since it is a research on one organization. The primary purpose of a case study is to determine factors and relationships among the factors that have resulted in the behavior under study. Since this study sought to study the effect of expatriate programs on knowledge transfer in multi-national companies; Standard Bank group was used in the case study design and was deemed the best design to fulfill the objectives of the study. A case study was chosen because it enables the researcher to have an in-depth understanding of the expatriate programs and knowledge transfer. The importance of a case study is emphasized by Kothari (2000) who acknowledge that a case study is a powerful form of qualitative analysis that involves a careful and complete observation of a social unit, irrespective of what type of unit is under study.

## Research Findings And Presentations

### Response rate

The study targeted a total of 77 respondents in in the three levels of management in Standard Bank Group. However, only 67 questionnaires were returned duly filled. This translated to 87% response rate. This response rate was adequate for data analysis and conforms to Mugenda and Mugenda (2003) stipulation that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent.

Table 1: Response Rate

	Frequency	Percentage
Responded	67	87
Not Responded	10	13
<b>Total</b>	<b>77</b>	<b>100</b>

### Reliability Analysis

A pilot study was carried out to determine reliability of the questionnaires. Reliability analysis was subsequently done using Cronbach’s Alpha which measures the internal consistency by establishing if certain item within a scale measures the same construct.

Table 2: Reliability Analysis

Scale	Cronbach's Alpha	Number of Items
Technology transfer	0.839	8

Gliem and Gliem (2003) established the Alpha value threshold at 0.6, thus forming the study’s benchmarked. Cronbach Alpha was established for every objective which formed a scale. The table above shows that the variable was reliable as the reliability values exceeded the prescribed threshold of 0.6 to ( $\alpha=0.839$ ).

### Effect of Expatriate Knowledge Transfer

In this section, the study presents results on the effect of expatriate knowledge transfer on multi-national companies’ subsidiary performance. Specifically, findings on effect of technology transfer are presented.

### Technological Innovation Transfer

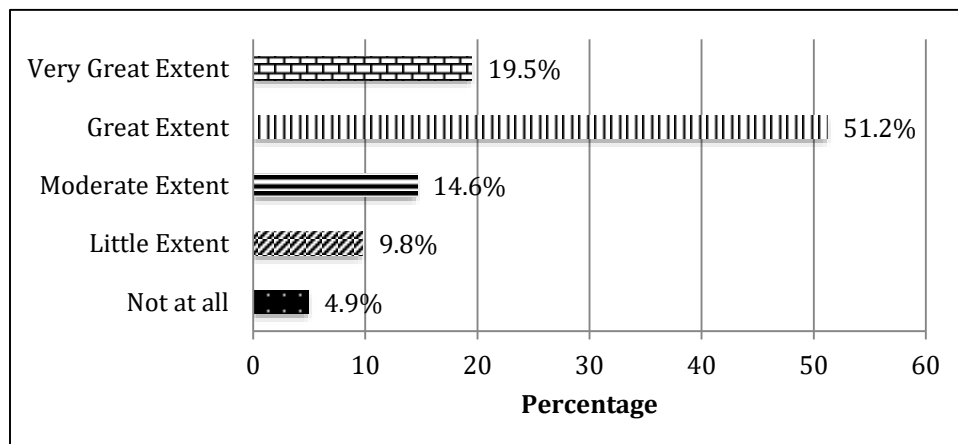


Figure 1: Extent Technological innovation transfer impacts multinational corporation subsidiary performance

The study sought to establish the extent to which technological innovation transfer impacts multinational corporation subsidiary performance. From the figure 1 in the previous page, majority of the respondents (51.2%) indicated that technological innovation transfer impacts multinational corporation subsidiary performance to a great extent, 19.5% said that it influenced to a very great extent, 14.6% to a moderate extent, 9.8% to a little extent while 4.9% were of the opinion that technological innovation transfer does not impacts multinational corporation subsidiary performance at all. It therefore depicts that technological innovation transfer impacts multinational corporation subsidiary performance a great extent.

*Table 3: Technological Innovation Transfer and performance of MNCs subsidiaries*

	<b>Mean</b>	<b>Std. Deviation</b>
Subsidiary's abilities to design new types of products or services and embedded in staffs that know how to perform such design works	4.0424	0.96825
Design of new process to for production and service delivery	4.2763	0.74352
Embracement of market technologies to enable the firm to relate its products and services to other firms' requirements and to their technologies	4.2346	0.70844
New equipment	4.2363	0.76871
New System	4.4242	0.70844

The respondents were required by the study to indicate the extent to which above form of technological innovation transfer impacts on performance of MNCs subsidiaries. The data findings are as presented on Table 3 above. Majority of the respondents indicated that the technological innovation transfer factors that influenced performance of MNCs subsidiaries to a very great extent include new system as shown by a mean score of 4.4242; design of new process to for production and service delivery as shown by a mean score of 4.2763; new equipment as shown by a mean score of 4.2363 and embracement of market technologies to enable the firm to relate its products and services to other firms' requirements and to their technologies as shown by a mean score of 4.2346. Further, the study showed that subsidiary's abilities to design new types of products or services and embedded in staffs that know how to perform such design works as shown by a mean score of 4.0424 influenced performance of MNCs subsidiaries to a great extent.

*Table 4: Influence of technological innovation transfer on performance of MNCs subsidiaries*

	<b>Mean</b>	<b>Std. Deviation</b>
Technological innovation transfer generates new job opportunities for previously unemployed labour, decrease idle capacity leading to enhanced performance	4.1818	0.76871
Technology transfer increases the physical stock of productive factors (resources) available	4.1515	0.71244
Transfer of foreign technology results in substantial growth in the productivity of existing factors (labour, capital and natural resources, including land)	4.0303	0.95147
Technology innovation transfer improves the competitiveness of their firms in international markets	4.2142	0.70844

The study sought to establish the respondents' level of agreement with above statements regarding technological innovation transfer and performance of MNCs subsidiaries. According to the table 4 above, majority of the respondents strongly agreed that technology innovation transfer improves the competitiveness of their firms in international markets as indicated by a mean score of 4.2142. Further, the respondents were in agreement with statements that technological innovation transfer generates new job opportunities for previously unemployed labor, decrease idle capacity leading to enhanced performance as indicated by a mean

score of 4.1818, that technology transfer increases the physical stock of productive factors (resources) available as indicated by a mean score of 4.1515, and that transfer of foreign technology results in substantial growth in the productivity of existing factors (labor, capital and natural resources, including land) as indicated by a mean score of 4.0303.

**Correlation Analysis**

*Table 5: Correlation Matrix*

	Performance	Technology transfer
Performance (r)	1.000	
(p) Sig. (2 tailed)		
Technology transfer (r)	0.894	1.000
(p) (2 tailed)	0.018	

The data presented above on technology transfer, managerial know-how transfer was computed into single variables per factor by obtaining the averages of each factor. Pearson’s correlations analysis was then conducted at 95% confidence interval and 5% confidence level 2-tailed. Table 5 above indicates the correlation matrix between the factors technology transfer, and multinational companies’ subsidiary performance. According to the table above, there is a positive relationship between technology transfer and multinational companies’ subsidiary performance of magnitude 0.894. The positive relationship indicates that there is a correlation between the factors and MNCs subsidiary performance.

This notwithstanding, all the factors had a significant p-value ( $p < 0.05$ ) at 95% confidence level. The significance values for relationship between technology transfer was 0.018. This implies that technology transfer has a significant factor.

**Summary of Findings**

The study established that technological innovation transfer impacts multinational corporation subsidiary performance to a great extent. The study also indicated that technological innovation transfer factors that influenced performance of MNCs subsidiaries to a very great extent include new system; design of new process to for production and service delivery; new equipment and embracement of market technologies to enable the firm to relate its products and services to other firms’ requirements and to their technologies.

Also, the study showed that the study showed that subsidiary’s abilities to design new types of products or services and embedded in staffs that know how to perform such design works influenced performance of MNCs subsidiaries to a great extent. The study found out that technology innovation transfer improves the competitiveness of their firms in international markets. Technological innovation transfer generates new job opportunities for previously unemployed labor, decrease idle capacity leading to enhanced performance. Technology transfer increases the physical stock of productive factors (resources) available. Also, the study indicated that transfer of foreign technology results in substantial growth in the productivity of existing factors (labor, capital and natural resources, including land).

## Conclusion of the Study

The study sought to find out the effect of technology transfer on multinational company subsidiary performance. To this objective, the study concluded that technological innovation transfer impacts multinational corporation subsidiary performance. The study highlighted that technological transfer through expatriate programs enables MNCs subsidiaries to acquire new system, design of new process to for production and service delivery, new equipment and embracement of market technologies to enable the firm to relate its products and services to other firm's requirements and to its technologies. Further, technological innovation transfer impacts multinational corporation subsidiary performance through generation of new job opportunities for previously unemployed labour, decrease idle capacity leading to enhanced performance. Technological transfer therefore results in substantial growth in the productivity of existing factors.

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