



Impact of institutional elements on ease of international knowledge transfer

A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration

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Abstract

Based on a study of knowledge transfer from a multinational corporation head office to subsidiary, this study examines the ease of cross border knowledge transfer to developed, developing and least developed countries impacted by varying institutional contexts. Institutions are clustered based on Scott's institutional theory (1995), into normative, cognitive and regulative pillars that frame the mental models and approaches of actors in these institutional contexts.

The study proposes that the institutional sectors of education systems, embeddedness of foreign firms, and authority systems impact ease of knowledge transfer from a MNC head office to its subsidiaries in developed, developing and LDCs.

Therefore this study makes an important contribution to the literature on cross border knowledge transfer in that it suggests that the external institutional contexts contribute to effective knowledge transfer.

The research provides management with an indication of the institutional elements that impact ease of transfer of knowledge, and the extent of interventions that can be optimised, to reduce the time; cost and effort associated with knowledge transfer

initiatives that will ultimately increase their efficiency. The research aims to provide useful insights for practitioners wanting to minimise the barriers to knowledge transfer and optimise employee knowledge transfer initiatives.

The overall outcome of the study is that as the socio-economic development increases, the ease of knowledge transfer increases. The study, hence contributes to the international business literature by identifying how inter-organisational knowledge transfer can be improved across borders.

Keywords

Institution, normative, cognitive, regulative, knowledge

Declaration

I declare that this research project is my own work. It is submitted in partial fulfillment of the requirements for the degree of Masters of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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Chapter 1: Research problem

1.1 Introduction to the Research Problem

All multinational corporations (MNCs) are exposed to the influence of their host country's institutional environments (Henisz & Delios, 2002). Since institutional environments vary between societies, Hollingsworth (2003) suggests that firms that adapt their strategies to the institutional environments within which they operate, are rendered a competitive advantage. A country's institutional profile can be used to characterise the national environment and the individuals, organisations and routines are in fact affected by the social environment in which they are based (Kostova, 1997). Thus, institutional elements structure individuals' behaviours and willingness or lack thereof, to change behaviours. Literature has framed this social environment as culture (Hofstede, 1980) - the integrative element of the national environment. However, reducing the national environment to culture may be an oversimplification – as suggested by Kostova (1997), the political and economic systems embedded in the country have a significant impact on behaviour.

MNCs are increasing their use of groups of multiple nationalities (Snell, Snow, Davison & Hambrick, 1998) in carrying out tasks. Instrumental to the effective performance, is

effective knowledge transfers. This is because value creation is stimulated through effective transfer of knowledge. Strategy and management researchers agree that knowledge forms a foundation for global competitive success (Bhagat, Kedia & Harveston, 2002). MNCs therefore need to align their strategies with the opportunities and constraints offered by the institutional elements of their subsidiary's country of operation in order to gain a differential and competitive advantage. "Effective cross border transfer of knowledge is facilitated by capabilities of the transferring and recipient organisations to use the appropriate institutional elements to accomplish the transfers" (Bhagat et al, 2002: 205).

Key to this is an understanding of differences between the institutions of the country of origin and those of the countries of operation. Therefore, if a practice is not aligned to the recipient country's institutions – which can be described as the established routines and "models for interpreting reality" (Ferner Almond & Colling, 2008: 306) – there is likely to be difficulty in interpreting the required practice. As a result knowledge transfer may be rendered ineffective.

MNCs with subsidiaries based in developed, developing and least developed countries, eager to share competitive knowledge throughout their organisations, need to understand the institutional frameworks across these very different contexts in order to acknowledge the cross-national nature of their learning capabilities (Bennet, Bouma &

Ciccozzi, 2004). This would allow the company to change behaviours to optimally benefit the organization through cross-national knowledge transfer. Knowledge transfer from the MNC to the subsidiary is important and relevant to ensure best practice dissemination (Minbaeva, Pedersen, Björkman, Fey & Park, 2003). Whilst leveraging inter-subsidiary knowledge is important, knowledge transfer from a MNC head office to its subsidiaries can deliver a single message across businesses. The key reason for such knowledge transfer is to keep constant the nature of the intended knowledge with the expectation of the same desirable outcomes across the subsidiaries.

This research proposes that it is possible to identify the varying institutional domains that render international knowledge transfer complex. Scholars (Hollingsworth, 2003; Kostova, 1997; Scott, 1995; North, 1989) have presented multiple views of how institutions impact attitudes and behaviour, and, we propose, ultimately the effectiveness of knowledge transfer. The literature review will unpack key institutional theories and identify how specific elements of these theories relate to, and shape knowledge transfer. From a theoretical perspective, the research will contribute to institutional theory by highlighting how knowledge sharing is affected by different institutional dimensions.

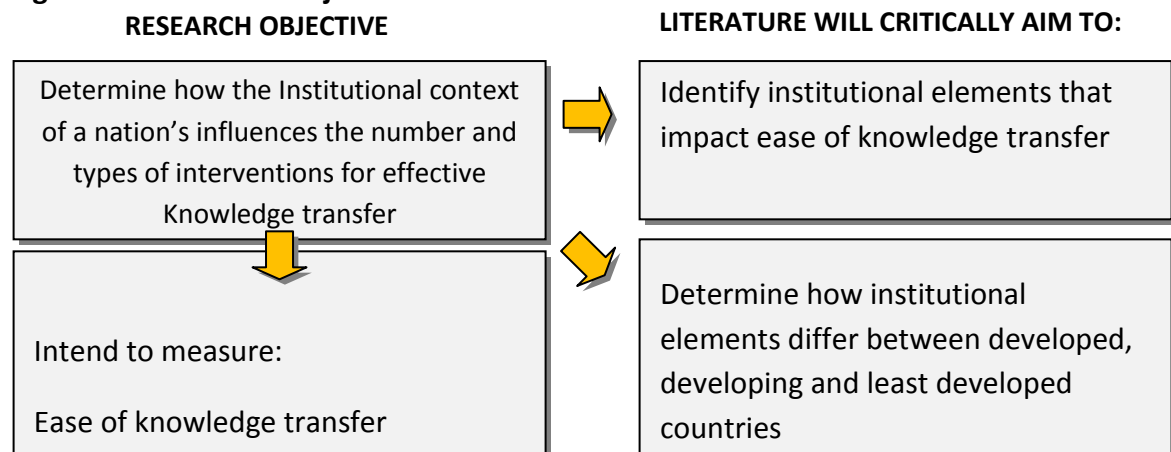
The managerial purpose of the study is to ensure efficient and effective knowledge transfer initiatives. The research provides management with an indication of the institutional elements that impact ease of transfer of knowledge. In assessing the ease of

transfer, the extent of interventions that can be expected during the knowledge transfer process will be defined. This will reduce the time; cost and effort associated with knowledge transfer initiatives and will ultimately increase their efficiency. The research provides useful insights for practitioners wanting to minimise the barriers to knowledge transfer and optimise employee knowledge transfer initiatives.

1.2 Research Objectives

The study adopts institutional theory (Hollingsworth, 2003; Scott, 1995; Kostova, 1997; North, 1989) as a basis for the analysis. Institutional theory presents a starting point to explain the behaviour of employees of MNCs “in the context of the individual frameworks within which they operate” (Bennet et al, 2004: 332). As an overarching objective, this study attempts to gain a deeper understanding of institutions and the influence of these institutions on the behaviours of actors exposed to new knowledge.

Figure 1.1: Research Objectives



It should be noted that the theoretical approach is concerned with cross border knowledge transfer from the multinational head office to subsidiary – particularly in organisations with subsidiaries based in nations at three distinct levels of institutional and socio-economic development.

The study will be applied to investigating the ease of knowledge transfer in seven countries: the highly developed Australia and United States of America, the middle income countries of Brazil and South Africa, and the underdeveloped countries Ghana, Guinea and Tanzania. These nations have been classified as such as they span various stages of economic development and political climates.

1.3 Research Scope

The scope of this research is limited to vertical inter-organisational knowledge transfer, that is, knowledge transfer from head office to internationally based subsidiaries. This is opposed to knowledge transfers across the organization and its suppliers or partners. Such a focus is relevant if one considers that if a single source is responsible for communicating the knowledge, then it is possible to keep constant the nature of the intended knowledge and expected outcomes from implementation of knowledge. This inquiry is also limited to a single MNC that has subsidiaries based in developed,

developing and least developed countries. The specific company and project was selected based on the following considerations:

- The project is hosted from the MNC head quarters and is of strategic importance to the company.
- The project encompasses knowledge transfer from this head office across all subsidiaries.
- There is general uniformity of the transfer process across subsidiaries.
- There is variability in the institutional contexts across the countries in which the subsidiaries are located. This variability provides a good basis on which to measure the impact of the institutional effects on knowledge transfer.

The test is conducted on a single company to limit the effect of organizational culture and organization attributes that may impact the transfer process.

The developed countries evaluated as part of this research are Australia and the United States of America, both with an annual GDP/capita in excess of US\$35,000. (See table 1.1) Developing countries that will be assessed are South Africa and Brazil, with an annual GDP/capita just short of US\$10,000. Finally, Guinea, Ghana and Tanzania have an annual GDP/capita of less than US\$ 1,400 per capita and hence have been classified as LDCs (UNDP, 2009).

The human development index (HDI) is a further index that was used to confirm the institutional clusters (UNDP, 2009)

Table 1.1: Key indicators (UNDP, 2009)

	Grouping	Country	GDP per capita (PPP USD)	Human Development Index (HDI)
			The 2009 UNDP report reports on 2007 data at the latest source	
1	Developed	Australia	34,923	0.97
2		United States	45,592	0.96
3	Developing	Brazil	9,567	0.81
4		South Africa	9,757	0.68
5	Least Developed Countries	Tanzania	1,208	0.53
6		Ghana	1,334	0.53
7		Guinea	1,140	0.44

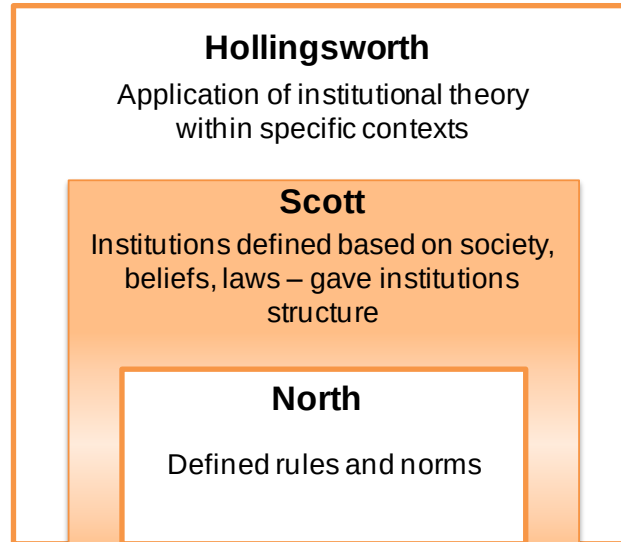
Chapter 2: Literature Review

Fundamental to the theory on institutions is North's (1990:3) definition of the concept of institutions:

Institutions are the rules of the game in society, or more formally, are the humanly devised constraints that shape human interaction. In consequence, they structure incentives in human exchange, whether political, social or economic. Institutional change shapes the way societies evolve through time and hence is key in understanding historic change.

Institutional environments vary between societies and it is society's rules and norms that specify how individuals conduct themselves and coordinate relationships with one another (Hollingsworth, 2003). These can be informal constraints such as customs and traditions as well as codes of conduct; and formal constraints such as constitutions and laws (North, 1990).

Figure 2.1: Literature consolidation model of North (1990); Scott (1995); Hollingsworth (2003)



Institutional analysis and institutional theory literature is vast and each scholar has their own unique approach to institutionalism. North (1990) was instrumental in laying the foundational work of institutional theory, which has played an important role in shaping the course of firstly economic theory and secondly social theory. The keystone contribution from North is that institutions are defined rules and norms that shape interactions and behaviour (North, 1990). These defined rules and norms impact the political, social, and economic incentives and their interpretations between actors involved in the transactions.

As institutional theory has evolved, scholars have built on North (1990). Scott (1995) consolidates early research, particularly based on North (1990) and has conceived a framework or pillar model to formalise learning's regarding institutions. According to Scott (1995), institutional environments are comprised of three main pillars: regulatory, cognitive and normative. No one single institutional element dominates the other; however they should all be considered in understanding phenomena (Scott, 1995). Recent literature (Scott, 2008a; Scott, 2008b; Ferner et al, 2008; Kostova, 1997) has made reference to Scott's (1995) institutional pillars as a robust academic framework for institutional analysis.

Within Scott's (1995) framework, regulatory institutions require conformity and involve established rules. It is an external pressure usually initiated by a regulatory (government) or powerful body (monopoly) in prescribing a way of being (Kwon, Berry & Feiok, 2009). Normative elements on the other hand are "rules that introduce a prescriptive, evaluative, and obligatory dimension to personal life" (Scott, 2001; 54). They include values and norms and hence desired objectives and the means to obtain it. They define actor's expectations regarding their goals or social positions. Cognitive institutions stem from participation in social life and obtained through social networks and a social reality.

Building on North (1990) and Scott (1995), Hollingsworth's (2003) focus remained on the conceptual model of institutions, tying in literature to form a conceptual model of how institutions influence and model behaviours of actors.

Prior to Hollingsworth's (2003) theories on institutional theory, Kostova (1997) built on North and Scott's literature in application of institutional theory between the MNC and its subsidiaries. Kostova (1997) explores institutions within the framework of international business from an application perspective, particularly in addressing the conflict faced by MNCs between global capability and knowledge dissemination and local adaptation (Kostova, 1997; Kostova & Roth, 2002).

Both Hollingsworth (2003) and Kostova (1997) touch on various elements of institutions and attempt to incorporate institutional theory into economic and social behaviour. This is achieved with reference to specific phenomena such as quality management and innovation.

Hollingsworth (2003) analyzes fundamentals set up by North (1990) and Scott (1995), as well as various institutional scholars and introduces a "new institutional" approach (Hollingsworth, 2003: 5). In his critical review of literature, Hollingsworth (2003) indicates that within North's (1990) definition, institutions and organisations are distinct entities. Within this context, organizations come into being and evolve over time based on societal

rules and norms. Scott (1995) and Hollingsworth (2003), however, argue that organizations and institutions are not distinct entities. Rules and norms evolve over time and influence and are influenced by organizational structures, governance and processes. Both Scott and Hollingsworth use North as the foundation for institutional theory, however, have evolved the theory within the large context on interrelationships between the players in the theory.

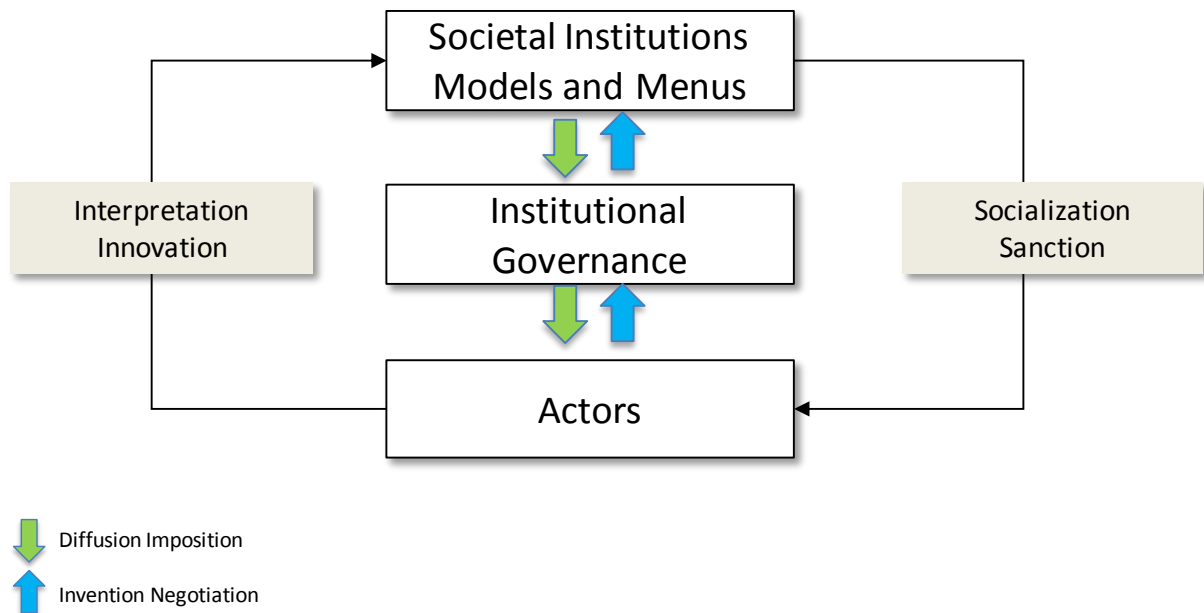
Hollingsworth and North do not offer a framework to define nations at varying levels of institutional development. Such a distinction is important, as the managerial implications of understanding a phenomenon across developed, developing and least developed countries can aid business planning and decision making.

However, Scott (1995) provides a holistic framework for institutional elements that addresses an integration of these multiple aspects of the external environment and the external and internal pressure they build on the actors affected. It is this institutional framework that shapes courses of action, prescribes behaviours, and defines options available to the actors influenced by these institutions (Currie & Suhomlinova, 2006). Within Scott's (1995) framework, it also possible to delineate institutional elements of developed, developing and least developed countries and determine their influence on differing actor behaviours within this context.

2.1 A defining model of institutions

According to Scott (1995), institutional theory operates in terms of three levels of interaction (figure 2.2). It begins with the societal institutional level, where models and menus are proposed and passed. Those societal institutions provide an indication of what is acceptable, possible and legitimate. The societal institutions shape and constrain actions on the lower levels. Below the societal institutions resides governance (organisations). The institutional framework is governed by the rules, norms and habits of society, and organizations.

Figure 2.2: Conceptual model of Institutional Theory and Institutional Forces (Scott, 1995:147)



Conversely, society and organizations behave in accordance with the existing institutions. If there are shifts in any institutional element, it results in a change in governance structures and organizations. Firms and organizations are involved in shaping the institutional framework through interaction and lobbying for or against an institutional change. At the last level, we have the actors (individuals or groups) - parties with vested interest the institutional framework as their interests and preferences and hence actions depend on the incentives offered by the institutional elements. At each level, there is diffusion and imposition of the institutional norms such that there is similarity of thought, actions and behaviours (Scott, 1995).

Taking this model into account, we can appreciate the stance taken by Denzau and North (1994) whose research indicates that individual's mental models form the basis of their rational choice framework. Individuals with similar cultural backgrounds share the same mental models. According to Denzau and North (1994), there is an interrelationship between the individual and the institutions. Institutions shared by individuals impact individual rational choice behaviour. Institutions are thus the drivers as well as the products of knowledge exchange (Cheng, Choi, Chen, Eldomiaty & Millar, 2004)

It must be noted that a single take-way is that all institutional scholars agree that the institutions guide and constrain behaviour, dictate actions and influence the options conjured by the actors and this must be addressed within the context of specific phenomena. In this case the phenomenon under investigation is knowledge transfer.

The subsequent aim of this literature review is to use Scott (1995) as an organising framework to unpack the normative, cognitive and regulatory dimensions of institutions into their various elements that have an impact on knowledge transfer.

2.1.1 Normative institutional elements

Normative institutions are symbolic in nature. The rules, norms and beliefs impact social behaviour (Scott, 1995) by imposing a sense of order and structure for actors, and provide grounds for cooperative commitments (Cardoso & Oliveira, 2007). A norm is an expectation of how individuals will behave in a specific situation. MNCs should understand and accommodate domestic institutional expectations as well as conform to the local societal institutions to fulfil their social responsibilities (Tseng & Kuo, 2009). This may be difficult in developing and least developed countries not only due to cultural distance (Hofstede, 1980), but because least developed and developing countries have less experience in the business requirements of MNCs and thus tend to lack the normative institutions to deal with doing business in an international framework (Tseng & Kuo, 2009).

2.1.2 Cognitive institutional elements

Cognitive institutions convey the role of identity in defining who we are as “social beings” (Judge, Douglas & Kutan, 2008:771) and how we respond to social interactions. It is the social knowledge shared by individuals in a country based on symbols that are considered important within that country. Institutions are thus building blocks of social order and

based on the level of development of the institutional element, it provides a view of specifics of categories of actors and information regarding their performance on specific activities (Streeck & Thelen, 2005). Cognitive programs affect the way people notice, define, and interpret information and stimulus.

2.1.3 Regulatory institutional elements

A core function of an institution is to constrain and standardise behaviour. This is primarily achieved through regulatory mechanisms (Judge et al, 2008) that set the rules, monitor compliance and provide the frameworks to achieve a specific outcome – financial, educational, and judicial. North's (1990) research made reference to regulatory institutions as they have a significant influence on economic transactions through instituting sanctions on specific actions. However, the concept framed by North (1990) is not limited to the economic context and can be expanded to define the impact of regulatory institution on multiple exchanges or transactions (Kostova, 1997; Hollingsworth, 2003; Scott, 1995).

2.1.4 Institutional sectors

Institutional sectors can be defined as bundles of institutions that result in specific outputs for society (Rohracher, Truffer & Markard, 2008). Institutional sectors result in defined rule sets or norms that shape performance and path dependency behaviours. According to (Rohracher et al, 2008), the institutional sectors include: the education system; legal or authority systems; business system (firm structures, extent of FDI, labour markets, inter-firm co-operation); financial system; and research system.

This study will be focused on ease of knowledge transfer based on the institutional developed of the first three institutional sectors:

- The education system
- Authority systems and corruption
- Business systems with specific reference to embeddedness of foreign firms

These institutional elements have an impact on the ability to learn (education); ability to foster an exchange – authority systems, and ability to create trust to foster an exchange (embeddedness of foreign firms).

Whilst Scott (1995) has laid out that the institutional pillars are analytically independent with no interaction, Hirsch (1997) has countered that this would weaken the power of the

typology, motioning that the pillars interact and have an inter-developmental effect on one another. Hence, as the institutional sectors are critically analysed, their definitions will be unpacked as they are mapped to the normative, cognitive and regulatory institutional pillars and the interrelated components will be unbundled.

Figure 2.3: Knowledge Transfer in the context of Institutions

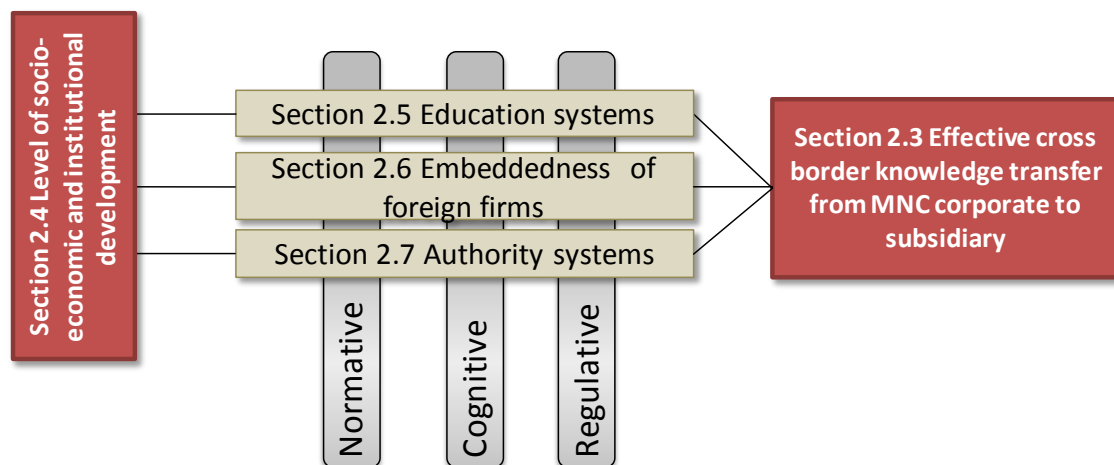


Figure 2.3 outlines the elements that form part Scott's (1995) pillars and how they relate to the remainder of the literature review. This will be developed into a framework that will act as the guide for organising the literature. The institutional sectors form a common thread across each of Scott's pillars. The essence of the model is that the level of socio economic developed has an impact on the development of the institutions in the country. Selected institutional sectors are thus impacted in terms of their maturity and the model

proposed through the research that this impacts the ease of cross border knowledge transfer.

The literature will first explore knowledge transfer within the context of the MNC as well as critically associate the institutional sectors with knowledge transfer. Following this, the literature will delve into institutional maturity within the context of developed, developing and least developed countries.

As this is discussed, each institutional sector will be unbundled across Scott's three-pillar institutional framework, developing hypotheses that link the level of development of the institutional sectors in developed, developing and LDCs with knowledge transfer.

2.2 Cross border knowledge transfer from the multinational corporation to subsidiaries

The ability to create and transfer knowledge is considered a key competitive advantage for the MNC (Minbaeva et al, 2003). A significant amount of literature has been dedicated to understanding the effectiveness and importance of knowledge transfer between subsidiaries, between MNCs and their external partners; from a subsidiary to the MNC

head office as well as from the MNC head office to the subsidiary (Minbaeva et al, 2003; Sumelius & Sarala, 2008; Chini & Ambos, 2005).

An important source of knowledge for a MNC subsidiary is its corporate head quarters (Sumelius & Sarala, 2008). This knowledge transfer contributes to knowledge development within the subsidiary and has the potential to ensure that the same knowledge is shared across the entire corporation. The subsidiary also gains knowledge from its external environment which contributes to specialised knowledge (Sumelius & Sarala, 2008). In some MNCs this subsidiary specialised knowledge may be an advantage. This occurs particularly due to a level of autonomy offered to subsidiaries which promotes innovative behaviour due to experimentation and the flexibility to explore uncharted experience (Sumelius & Sarala, 2008). The specialised knowledge can also be a disadvantage or even a risk, specifically when embeddedness in the external environment results in migration away from the core offering to the MNC to meet needs of demanding actors in the external environment.

It is important to define knowledge and discuss the impact of knowledge transfer in organisations. Bhagat et al (2002: 206) indicates that knowledge is “created, restructured, or changed from related and unrelated pieces of information to the extent that the information has the right kinds of signals that, in the mind of the receiver, are conducive to the creation of knowledge.” Knowledge sharing from the MNC to the subsidiary can

generate synergies across the firm, establish a single standard of operation and allow the effective design of the organisation.

Once knowledge is transferred, the user can begin the process of actual utilisation of the knowledge in business operations (Szulanski, 1996). Szulanski (1996) proposes a four stage approach to knowledge transfer: initiation, implementation, ramp-up and integration. The first two stages include the transfer of the knowledge, whilst the latter two stages include the actual efforts to utilise the knowledge. We can thus see that knowledge transfer requires an interaction between two units – the sender and the receiver.

For effective knowledge transfer to take place a number of factors are required for each of these two units. They include the relationships between units such as organizational structure or speaking a common language (Argote, McEvily & Reagans, 2003a); the properties of the knowledge itself – these include tacit as opposed to explicit nature of knowledge (Nonaka, 1991), simple versus complex knowledge (Simonin, 1999); richness of the transmission channels (Gupta & Govindarajan, 2000); and recipient's absorptive capacity (Argote et al, 2003a; Szulanski, 1996; Simonin, 1999; Gupta & Govindarajan, 2000).

Many firms, as part of their transnational strategies are aiming to keep constant the nature of product and service provided across industries. This requires the communication

of knowledge from an MNC head quarters to the subsidiary, with the aim of ensuring the intended outcome across the business is consistent. For these firms, the transfer of technical knowledge from an MNC corporate to subsidiaries through the same medium allows for an upgrade of the competence of the MNC through an upgrade of the competence of the subsidiary (Sumelius & Sarala, 2008). The focus of the research will be on such internal knowledge transfer from the MNC corporate head office to the subsidiaries.

If the transmitting unit is kept constant, there are a number of properties of the receiving unit that act as a determinant of the effectiveness of knowledge transfer (Minbaeva et al, 2003; Sumelius & Sarala, 2008; Argote et al, 2003a). Due to differences in subsidiaries, they are not equally predisposed to a successful launch and dissemination of knowledge transfer initiatives or have similar abilities to absorb and use the knowledge (Adenfelt & Lagerstrom, 2006). Thus the ease of knowledge transfer varies.

This thesis proposes that the external, institutional environment impacts the effectiveness of knowledge from the receiving end of knowledge transfer. Given the difference in institutional contexts of developed, developing and LDCs, we propose that MNCs with subsidiaries in very different institutional and socio-economic environments experience a varied ease of knowledge transfer.

Within the context of this research, the message, the sender (the multinational) as well as the mechanism of transmitting the knowledge has been kept constant. Only the receiving units, being the subsidiaries, differ. Moreover, the core function of each of these subsidiaries is the same, and they differ primarily in terms of being located in very different institutional contexts. This enables us to understand the link between knowledge transfer and the cognitive, regulatory and normative dimensions of institutions, by specifically looking at the institutional sectors of the education system; embeddedness of foreign firms and authority systems in their host countries.

The sections that follow expand on the institutional environment of developed, developing and LDCs. Following which the selected institutional sectors – education systems, embeddedness of foreign firms and authority systems – will be unbundled with respect to knowledge transfer and institutional theory.

2.3 The institutional environment of developed, developing and least developed nations

UNCTAD (1995) distinguishes between three types of countries – developed, developing, and least developed. The distinction is made on the level of socio-economic development

between the countries as well as the degree of institutional development and operationalisation (Cuervo-Cazurra & Dau, 2009; UNCTAD, 1995).

Developed countries are defined as those that have well established institutions and governance mechanisms. As such, these nations have high levels of human development (UNCTAD, 1995). Developing countries are those with functional institutions; however the institutional systems are not well established. LDCs are defined as those with dysfunctional or non-existent institutional systems and poor national governance.

The countries' competitiveness is highly dependent on the competitiveness of its firms. Firm competitiveness and cross-country variance in organisation behaviour (Kostova, 1997) is dependent on the macro-economic variables of the country such as GDP, FDI and the inherent institutions - functioning of markets, education systems, labour market, infrastructure and technology (Scott, 1995). Since institutional environments vary between societies, evolve over time and shape and constrain individuals (Hollingsworth, 2003), they form the basis of different types of decision making and influence how information is processed and structured – and consequently what actions are taken (Hollingsworth, 2003). As an example, within Anglo-American societies the institutional arrangements have evolved from rules and norms whereby individuals are in the pursuit of self-interest. Unlike East Asian communities whereby communitarian type norms are prevalent. These Anglo-American communities promote higher behaviours of

individualism and individual rights, whereas East Asian societies promote lower levels of individualistic behaviours and higher levels of social interactions and established relationships (Hollingsworth & Gear, 2002). The research proposes that the ease of knowledge transfer between developed, developing and LDCs would differ.

From the countries selected as part of the analysis, GDP per capita is used as the tool to distinguish between developed, developing and LDC. Together with the HDI, which is published by the United Nations Development Programme (UNDP), the indices are used to rank countries based on their level of development (UNDP, 2009) (table 1.1).

Least developed and developing countries have lower levels of institutional development. On the other hand, we can expect developed countries to have mature regulatory institutions, as well as robust and respected educational and law and order systems.

Whilst the three pillars the literature has focused on - normative, cognitive and regulatory- are important in their individual capacities, their combination affects an MNC in multiple ways. For example, the normative component is important when we consider that an MNC needs to transfer best practice or knowledge to its subsidiaries (Eden & Miller, 2004), as it explains the difficulties in the transfer process due to local belief systems. In turn, the regulatory institutions are important as it affects the MNCs decisions regarding HR policies, abidance to laws and internal structures and procedures.

2.4 Educational systems

2.4.1 Education systems implications for knowledge transfer

Within Szulanski's research (1996) it was clearly illustrated that the recipient's absorptive capacity is a key factor that enables or inhibits knowledge transfer. Absorptive capacity plays a key role in the actor's ability to assess and make use of external knowledge (Szulanski, 1996).

Absorptive capacity can be defined as 'ability to recognise the value of new external information, assimilate it, and apply it to commercial ends' (Cohen & Levinthal, 1990: 128), which is a function of the recipient's environment, its level of education and motivation to learn (Cohen & Levinthal, 1990; Kim, 2001; Minbaeva et al, 2003). A higher absorptive capacity indicates the ease of knowledge transfer and improved reasoning and competence to absorb and apply knowledge (Szulanski, 1996). Since absorptive capacity is driven by level of education, we can propose that a higher level of education thus improves ease of knowledge transfer.

Knowledge transfer or learning depends on a learner's ability to learn – a "social competence" that is built and needs to be maintained (Beerepoot, 2008). This

competence refers to the individual's capacity to handle situations and complete tasks – driven by a strong educational foundation, particularly formal teaching (Beerepoot, 2008). Basic schooling and literacy provides the individual the competence to absorb simple manufacturing or industrial skills, whilst advanced and tertiary schooling allows the individual to tackle more complex tasks and acquire multifaceted skills (Beerepoot, 2008). Todo, Zhang and Zhou (2009) have shown that knowledge transfers are higher within domestic firms that hire employees with a higher level of education.

This ability is developed through strong educational foundations and training that bestow the ability for logical reasoning (Argote, Brooks & Reagans, 2003b) and experience to create a common framework to interpret and understand the knowledge. Motives incorporate the incentives associated with withholding or transferring knowledge – environments that provide positive incentives for knowledge transfer create a learning environment.

Institutional frameworks impact learning styles vary between countries. This may vary to a degree that knowledge packaged as a generic product to multiple countries and cultures may lose its value if a specific learning style is not applied (Bennet et al, 2004). As a result the generic product may serve no relevance. As an example, Asian cultures demonstrate a high emphasis on authority and politeness. Demonstration of these characteristics when communicating knowledge encourages acceptance of the new learning and a resulting

change in behaviour. This differs from Australian cultures, which prefer critical analysis as a learning technique, rendering the learning more effective within the Australian culture (Auyeung & Sands, 1997).

2.4.2 Education as an institutional sector

Education is responsible for the creation of a skilled workforce that demands more efficient and effective ways of working through learning and knowledge acquisition and transfer (Varsakelis, 2006). Scholars of education looking at education systems in developed, developing and least developed countries have shown that there is marked education inequality between these nations (Buchmann & Hannum, 2001). This is primarily influenced by the macro-environment such as normative frameworks that shape the importance of education and learning within the society, as well as regulative institutions such as the provisional of education systems and opportunities for learning.

Education as a normative institution: if we consider that normative institutions are symbolic in nature, and the rules, norms and beliefs within society impact social behaviour (Scott, 1995), then *the learning orientation*, and hence the *importance of learning*, indicates the grounds for cooperative commitments (Cardoso & Oliveira, 2007) for knowledge transfer. Since a norm is an expectation of how individuals will behave in a specific situation, actors with the inherent belief that learning and gaining an education is

important will have a positive attitude toward knowledge transfer, hence resulting in an ease of knowledge transfer.

The importance of learning in society is shaped by the extent by which the state makes provision for education institutes, improving school quality, and laws on compulsory schooling requirements as well as promoting educational benefits. This fuels the “demand” (Buchmann & Hannum, 2001: 78) and desire for knowledge. Developed, developing and LDC countries have educational policies at varied states of efficacy. According to Buchmann and Hannum, 2001, a strong authoritarian state like South Africa had changed educational systems during the era of apartheid, affecting the educational opportunities and access for communities. This reduced the demand for education and learning and hence placed a lower importance on learning.

A study by Rolleston (2008) in Ghana indicate that higher education investment is rational choice behaviour in economic terms. Actors aspire for higher education attainment, however the resulting compression of salaries and job opportunities in LDCs destroys actors’ expectations regarding education and learning.

Other LDCs have similar experiences. The expectations of future economic benefits of education and learning in a country like Guinea is seen as unrealistic and results in frustration among the generation being educated. This is specifically due to the fact that

the labour markets absorptive capacity in developing and LDCs is significantly lower than the number produced by the modern schooling system (Glick & Sahn, 1997). Thus retarding any potential achievements associated with gaining an education, that is, the development of a knowledge society (Glick & Sahn, 1997).

Governments, like those of Australia and the United States of America, are now putting pressing attention on higher education qualifications for their populous in an aim to develop “knowledge nations” (Brown, 2006: 72). Whilst credentials are viewed as an index for competence, graduates would also have to prove themselves capable of performing the job in order to be promoted to a position of management.

As such, from a social perspective, there is emphasis on a specific norm and actors would show the willingness to accept actions that support that norm.

Hypothesis 1a (H1a): there is a positive relationship between the importance of learning in a nation and ease of knowledge transfer

Education as a cognitive institution: Since cognitive institutions convey the role of identity in defining who we are as “social beings” (Judge et al, 2008:771) a high level of education can impact ease of knowledge transfer and hence it is proposed that a *high qualification* indicates that learning and knowledge is an important symbol within the social fabric of

individuals in the country. A study by Varsakelis (2006) has shown that countries that are able to obtain critical mass in school attending youth, are able develop into societies that demand knowledge. It can thus be proposed that this would result in ease of transfer of new knowledge due to this inherent demand.

However, many developing and especially LDCs lack the channels that facilitate the exchange of labour market information which results in limitations on the pool of labour resources hired. As such these markets use specific signals of capabilities. These include the hiring of relatives or selection based on the level of higher education qualification rather than productivity (Strobl, 2004). This has the potential to either promote or hinder knowledge transfer. Therefore as part of the model, we would expect to see both a high qualification as well as strong education systems as supportive evidence for ease of knowledge transfer. Seeing one without the other signals labour displacement due to poor labour market information.

Richer, developed countries, can afford higher education, thus inflating the demand for knowledge, whilst developing and LDC have limited access to higher education. The position taken by this study is that higher education has benefits of greater socialisation and liberalisation – thus increasing access to and demand for education and knowledge. As a result promoting ease of knowledge transfer.

Hypothesis 1b (H1b): There is a positive relationship between a high level of education ease of knowledge transfer

Education as a regulative institution: As highlighted in the normative and cognitive pillars of education as an institutional sector, actors develop the capacity to handle complex situations. A strong educational foundation, exposes the actor to alternative approaches to problem solving, and increases the actor's absorptive capacity (Szulanski, 1996). This actor is thus able to recognise the value of new knowledge and interpret the new knowledge.

The overall hypothesis thus refers that a nation with a strong educational system places not only intrinsic importance on the value of education, but also develops the regulatory context to realise the potential offered by education. The existence of such a strong educational system enables knowledge transfer, therefore

Hypothesis 1c (H1c): There is a positive relationship between a strong educational system and ease of knowledge transfer

2.5 Embeddedness of foreign firms

2.5.1 Implications for knowledge transfer

The inflow of foreign direct investment (FDI) has had positive impacts on many economies. Positive effects include demand for intermediate products and services which results in a positive explosion of the host country's industrial sector (Giuliani, 2008) as well as technological spillovers and the transfer of capabilities and knowledge. Market liberalization, fragmentation as well as privatization of state owned enterprises have fuelled FDI globally and FDI has resulted in the introduction of new technologies and new knowledge into many economies (Geppert & Clark, 2003). Within this context, we expect knowledge transfer from foreign firms to local counterparts.

Geppert and Clark (2003) have argued that an increase in FDI results in imitation of knowledge from foreign trainers to local trainees. Geppert and Clark (2003) further argue that knowledge transfer can only be considered effective if it is mediated by local ideas and social structures. It requires the use of the trainees' rational choice behaviours and embedded institutions rather than forced imitation to be successful.

As such an influx of foreign capital does not lead to change in managerial practices through knowledge transfers (Whitley & Czaban, 1998). Capabilities and competencies are based on national institutional settings (Whitley, 2003). Thus a degree of foreign firm embeddedness may be required to grease the knowledge transfer activity rather than enforced mimicry. Against this setting, it is important to note that, the backward linkage between a local subsidiary and its foreign MNC corporate is a critical channel for knowledge transfer (Giuliani, 2008).

A high degree of foreign firm presence results in greater embeddedness. Embeddedness refers to the degree with which exchanges take place through social relationships and non-commercial criteria (Eden & Millar, 2004). If there is high embeddedness of local firms, there is a high differentiation between insiders and outsiders which increases the cognitive distance between those on the giving end versus those on the receiving end of an exchange (Eden & Miller, 2004). It results in a socio-economic environment creating close interactions between local firms, institutions and private actors (Hudson, 1994) and results in commonality in terms of perceiving technical and economic issues as well as problem solving. This increases effectiveness of knowledge transfer (Hudson, 1994) within the local environment, but may result in some difficulties in knowledge transfer from an external firm. If the parent MNC resides outside the local environment, it will thus add to the complexity of knowledge transfer between the parent MNC and subsidiary.

Embeddedness results in an increase in diffusion of norms that enhance relationships, and social partnerships (Dayasindu, 2002). This shapes and enhances relationships and leads to efficiency or inefficiency of any social or economic transaction (Dayasindu, 2002).

Together with embeddedness, a higher proportion of foreign to local firms will increase local familiarity with alternative ways of working (Eden & Miller, 2004). Therefore, it can be argued that high foreign firm embeddedness within a nation will reduce the resistance associated with knowledge transfer and will result in greater acceptance of the new knowledge. The primary benefits that can be expected from a greater embeddedness of foreign firms is an increased ease of knowledge transfer.

2.5.2 The embeddedness of foreign firms as an institutional sector

A MNC must overcome foreignness by transferring firm level competitive advantages to the subsidiary (Dunning, 1981). The firm must become part of the social fabric of the domestic environment through increasing familiarity and exposure to the local environment (Kostova, 1999) and the firm must foster a level of trust to facilitate business as well as a social exchange (Rus & Iglic, 2005).

Normative institutions: From a global context, MNCs are faced with having to communicate with dissimilar nationalities and trust is important to facilitate an exchange

(Ring, 1996). Interpersonal trust is defined as a positive expectation regarding of others and is linked to the personal experience between the actors and the social ties and belief systems that build those expectations (Rus & Iglis, 2005). Zucker (1986: 54) defines trust as a “set of expectations shared by those involved in an exchange” and this definition encompasses the characteristic-based, institutional, and interpersonal trust.

Trust is a factor of the institutional environment of individual actors. The expectations regarding behaviour are based on the strength of institutional systems (Scott, 1995; Hollingsworth, 2003; Rothstein & Stolle, 2001). “It is the implied normative meaning of the institutions that allow people to trust (or not trust) others within the same institutions even though they may be strangers” (Rus & Iglis, 2005: 374)

Trust has implications in facilitating business and social exchanges. It encourages cooperation between actors (Rus & Iglis, 2005). This is not necessarily due to individual psychological factors but a factor of the institutions structures that shape the incentives and constraints of the actors and their choices in cooperative behaviours (Rus & Iglis, 2005).

There are multiple dimensions of trust with multiple influences that have an impact on improving the performance of an exchange between actors.

Interpersonal trust refers to one's ability, integrity and compassion. It is a function of cognitive-based trust and affect-based trust. Cognitive-based trust takes beliefs, peer reliability and dependability into consideration (Tseng & Kuo, 2010; McAllister, 1995). Affect-based trust is embedded in "reciprocated interpersonal care and concern" (McAllister, 1995: 25). In affect-based trust, there is emotional investment in trust relationships and the links between actors are the basis of this trust. It is important to consider both the cognitive and affect-based dimensions of trust, as the expectation to develop affect-based trust hinges on actors first proving their reliability and dependability.

There is a tendency to avoid an exchange of any kind until interpersonal trust is established (Tseng & Kuo, 2010). Trust promotes the exchange of knowledge and information (Argote et al, 2003a), and the extent of knowledge transfer in both directions (Argote et al, 2003a). A strong tie between actors improves trust which improves knowledge transfer (Levin & Cross, 2004). Since strong ties are based on shared norms and beliefs, we can argue that the perceptions of trust differ based on the institutional development of the country in which the actors find themselves. Rus & Iglis (2005) have highlighted that institutional trust has a positive relationship on performance and promoting an exchange between actors where a high degree of institutional development results in a high confidence in the institutional systems of the country and a lower reliance on interpersonal trust. Alternatively, a poor institutional environment results in lack of

confidence in the institutional systems and a greater reliance on interpersonal ties and interpersonal trust to facilitate an exchange. This will have an impact on ease of knowledge transfer, such that:

Hypothesis 2a (H2a): there is a positive relationship between a high degree of trust and ease of knowledge transfer

Cognitive institutions: A high degree of associative ability refers to the association between social partners, and actors who are encouraged to cooperate in an exchange, share information and ideas and promote the well being of a group (Tseng & Kuo, 2010). As such, cognitive institutional distance is affected by the proportion of foreign to local firms.

As the number of foreign firms increases, there is an increase in familiarity with outside ways of working. This is because the number of social interactions between outsiders and locals increases (Eden & Millar, 2004). It also increases the amount of information available locally to create cognitive frameworks about expected social interactions. Less developed and isolated nations have less experience with international business and thus lack strong normative institutions to support an international transaction or exchange (Tseng & Kuo, 2009). Where the proportion of foreign to local firms is low, it is expected that there is low social interaction between locals and outsiders and there will be a

reluctance to engage in exchange. Locals will thus resort to reliance on their personal ties through social networks to impress the exchange (Tseng & Kuo, 2009). Greater social embeddedness of foreign firms will therefore likely have a similar effect as trust, and is likely to result in a greater ease of knowledge transfer. Therefore, it can be argued that if the proportion of foreign to local firms is low, it will reduce the ease of knowledge transfer.

Hypothesis 2b (H2b): There is a positive relationship between a high degree of foreign firms' presence and ease of knowledge transfer

Regulatory institutions: From a regulative perspective, government may put policies in place to enable or hinder foreign MNCs participation in the country (Kostova, 1999). If such a regulatory institution is in place, it creates an unfavourable environment for foreign investors that wish to operate in the country. Regulatory institutions that hinder foreign MNCs from entering the country and setting up physical premises and operations in the country, also deter the MNCs from establishing close networks with local actors (Tseng & Kuo, 2009). This includes the establishment of trade treaties, free trade agreements, and open borders to foreign investment into the country. Thus the country level openness to foreign firms is relevant to ease of knowledge transfer from a regulatory perspective.

Hypothesis 2c (H2c): There is a positive relationship between openness to foreign firms and ease of knowledge transfer

2.6 Authority systems

2.6.1 Authority systems and the implications for knowledge transfer

Authority institutions, like law and order can both constrain or enable behaviours based on the level of application of the institution in the country. Law promotes social order by providing a framework of articulating requirements of the idea of justice. Law restrains those actions that are incompatible with this framework (Turk, 1976) and results in a culture of uncertainty of expectations. When actors have a greater certainty regarding the implications of their behaviours, coordination is made easier (Yarbrough & Yarbrough, 1990). A greater certainty enhances predictability to support exchange and cooperation (Yarbrough & Yarbrough, 1990). From an authority perspective, the requirement lies in creating an institution of law and order that facilitates a “mutually beneficial pattern of cooperation” (Yarbrough & Yarbrough, 1990: 240). Such an institution cognitively and normatively promotes cooperation among parties.

For example, within certain cultures, bribery is accepted as a norm. However, bribery distorts the exchange and there is an expectation that nothing can be gained or given without an expected gain (Arthur and Kim, 2005). With reference to knowledge transfer, if corruption, which is an outcome of the authority system, is widespread, the nation is likely to resist knowledge transfer attempts as there is no clear indication of the tangible gains of the knowledge transfer.

2.6.2 Authority systems as an institutional sector

Since institutions either incentivise or disincentivise certain behaviours (Tool, 1993; Kostova, 1997; Bennet et al, 2004; Hollingsworth, 2003), they provide a means of social control through which individuals' conduct is regulated. Henisz (2000) suggested that one of the institutional variables that can augment or distort returns on human capital is the extent of rule of law and a country with sound law and order tradition has a strong judiciary and political institutions.

Corruption, like law and order regimes, is an outcome of an institutional context. Institutions can positively frame mindsets and behaviours, but high controls and regulation can also hinder innovation and opportunities for knowledge transfer (Hollingsworth, 2008). This is particularly due to the bureaucracies and lack of choice within designated areas.

The factors that lead to corruption behaviours include higher barriers to entry within voting areas, lack of individual accountability; the level of authoritarianism as opposed to the level of country democracy; design of parliamentary versus presidential systems with the inherent checks and balances to curb corrupt behaviours (Toerell, 2007). In addition, the underlying societal effects that were responsible for the rise of the political regime may be the underlying forces driving corruption.

Empirical evidence has shown that Scott's three institutional pillars interact amongst themselves to influence corruption (Li, Moy, Lam & Chu, 2008). The following sections explore the association between corruption which is an outcome of authority systems and the normative, cognitive and regulatory institutions.

Normative institution: Normative aspects of institutions guide organizational actions as a result of social obligations (Li et al, 2008) and what is considered culturally acceptable. Hence, certain societies may believe that there is nothing wrong corruption. Furthermore, in these countries, the actors place additional emphasis on their social networks in conducting an exchange or a transaction. It is thus imperative to be a part of this social network prior to the transactional exchange (Tseng & Kuo, 2009). As an example, the value of "guanxi" (Tseng & Kuo, 2009: 6) in China is of paramount importance in obtaining knowledge, reducing uncertainty, reducing time in exchanges and easing any exchange. The expectation from the exchange is self benefit through what can also be termed

bribery (Arthur and Kim, 2005). The knowledge transaction must prove to have a benefit prior to being accepted, thus hindering or promoting a knowledge transfer.

From a normative perspective, cultural belief systems of corruption impact ease of knowledge transfer. Research into cultural influence on social interactions has shown that a high level of uncertainty avoidance and masculinity result in a high level of corruption (Getz & Volkema, 2001; Robertson & Watson, 2004). Since corruption is the area of focus, it is proposed that a high perception of corruption reduces the certainty of an exchange and hence negatively impacts ease of knowledge transfer with the recipient.

Hypothesis 3a (H3a): There is a positive relationship between high perception of corruption and a reduced ease of knowledge transfer

Cognitive institution: cognitive aspects of institutions embody symbols, gestures, and a cultural mindset or framework that guides the understanding of the world (Scott, 1991). According to the Global Corruption Report (2009), governing officials in least developed and developing economies have participated in corrupt activities accounting US\$20 – US\$40 billion annually. This disregard for the law send citizens of the country the message that gain from “personal and familiar relationships” is larger than gain through personal

work ethic and intellectual effort. The message encourages bribe-collection behaviours (Toerell, 2007), advancing rent seeking from talented actors and entrepreneurial ventures and also discourages the lawful application of talent and entrepreneurial abilities. Over the long term, it disenables the gains from learning and knowledge.

From a cognitive institution perspective, within nations with high levels of corrupt behaviours, *the extent of corruption* will be an important measure in understanding the ease of knowledge transfer. As such, the following hypothesis can be proposed:

Hypothesis 3b (H3b): There is a positive relationship between a low level of corruption and ease of knowledge transfer.

Regulatory institution: Regulatory institutions include inventions from government in the form of laws and regulations (Scott, 2001). Countries with weak institutional settings have weak property rights, poor contract enforcement and excessive regulations – leading to red tape that promotes corrupt behaviours (Global Corruption Report, 2009). These weak institutions are typically found, and indeed seen as the definition of a least developed country (UNCTAD, 1995). Within these countries, corruption is the “rule” (Toerell, 2007). It is part of the societal norms and inherent behaviours that guide how work is done and how interactions are forged – it is society’s informal contract (Toerell, 2007).

Corruption declines as per capita income of the country increases. This is owing to the fact that salaries of non-elected officials are higher (Heston & Kumar, 2008). As such we can expect increasing levels of corruption between developed, developing and LDCs. From a regulatory institutional perspective, if a country's legal system to condemn corruption is under-developed and the legal code is not evenly enforced, respect for authority declines. The transactions between actors – economic or otherwise - are disorderly and inefficient (Judge et al, 2008). As such, the extent that systems are in place to punish corrupt behaviours promote knowledge transfer.

Knowledge is private, has intrinsic value, and is hence a key to opportunity. Therefore, within societies that have high corruption, there is a reluctance to share learnings without remuneration. Remuneration is considered an equitable income in corruption relationships (Arthur & Kim, 2005). Likewise, knowledge is not acquired without a promise of improved earnings as a result of its acquisition (Arthur & Kim, 2005) – the actor must be convinced of the value of the exchange and that he will be better off when he sacrifices his time for this new knowledge.

An interesting observation from Indian and Chinese developing economies is the massive economic growth despite high rent seeking and corrupt behaviours (Heston & Kumar, 2008). Chinese and Indian economies have been termed the knowledge economies of the new millennia, increasing economic growth through knowledge transfer gains and

resulting innovations in product and service strategies, management and leadership practices and governmental outlooks. Studies by Heston and Kumar (2008) are indicative that this large growth spurt is positively associated with opportunities for large, corrupt gain and the introduction of regulatory practices has been correlated with a decline in knowledge transfer behaviours and innovation.

It is yet to be understood whether this is a phenomena unique to Indian and Chinese economies or a global developing market trend. Regardless, unless the value of the communal knowledge is explicitly and convincingly communicated, individuals in countries with higher levels of corruption can believe that they stand to gain little from new knowledge. Knowledge transfer within a company tends to be inclusive – the company would like all to have access to it. It does not confer the holder of the knowledge any particular unique privilege. In corruption-prone societies, knowledge can therefore be easily seen as less valuable. Hence we hypothesize that:

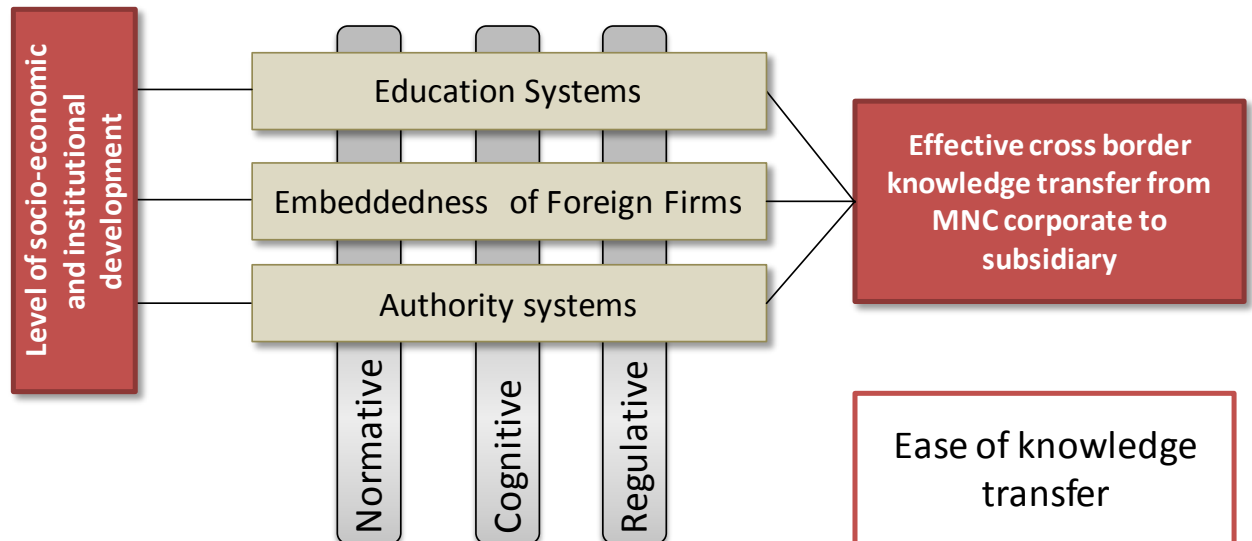
Hypothesis 3c (H3c): There is a positive relationship between high extent of strong developed systems of law and order and ease of knowledge transfer.

2.6.3 Concluding link between institutional sectors and knowledge transfer

If we consider the position by van der Steen (1999), that learning does not occur in a random way, but is based on the mental frameworks of the individuals; and superimpose the properties of effective knowledge transfer (Argote et al, 2003a) over this position, it can be argued that there is a link between effective knowledge transfer and mental models such as values, beliefs, social knowledge, also known as cognitive and normative institutions. Furthermore, van der Steen (1999) indicates that learning is also influenced by the actor's environmental or external conditions such as access to training and education. Thus, it can be argued that there is a link between the external institutions and the effectiveness of knowledge transfer.

This research confines its scope to a constant, explicit body of knowledge transferred from the MNC headquarters to the subsidiary from a constant sender using a constant transmission process, hence it is the properties of the receiving unit that will be explored. Particularly those driven by the institutional context. Figure 2.4 below illustrates the knowledge transfer model under investigation. It brings together cognitive, regulatory and normative elements of the institutional environment and investigates how they impact knowledge transfer.

Figure 2.4: Cross border knowledge transfer – institutional impacts



Chapter 3: Research Hypotheses

The literature review has provided arguments to support the view that the nature and functioning of institutions are likely to affect knowledge transfer from a MNC to subsidiaries in developed, developing and LDCs. In particular, the normative, cognitive and regulatory dimensions of the three institutional sectors – education, embeddedness of foreign firms and authority systems.

The hypotheses are summarised in the table that follows

Figure 3.1 Research hypotheses

<u>Hypotheses</u>	<u>Education systems</u>	<u>Embeddedness of foreign firms</u>	<u>Authority systems</u>
<u>Normative</u>	H1a: There is a positive relationship between the importance of learning and ease of knowledge transfer	H2a: There is a positive relationship between a high degree of trust and ease of knowledge transfer	H3a: There is a positive relationship between high perception of corruption and a reduced ease of knowledge transfer
<u>Cognitive</u>	H1b: There is a positive relationship between a high level of education and ease of knowledge transfer	H2b: There is a positive relationship between a high degree of foreign firms presence and ease of knowledge transfer	H3b: There is a positive relationship between a low level of corruption and ease of knowledge transfer
<u>Regulative</u>	H1c: There is a positive relationship between a strong educational system and ease of knowledge transfer	H2c: There is a positive relationship between openness to foreign firms and ease of knowledge transfer	H3c: There is a positive relationship between high extent of strong developed systems of law and order and ease of knowledge transfer

Chapter 4: Research Methodology

This chapter outlines the research methodology and design used to address the hypotheses articulated in chapter 3 and 4.

4.1 Research design

The research is quantitative and explanatory in nature. Explanatory research looks for causes and reasons. It is a style of research that seeks to understand the trait and mechanism of a relationship and association between a dependent and independent variable. It will thus provide an explanation between two or more phenomena (Zikmund, 2003). Within this context explanatory research has been used to clarify a substantive and meaningful relationship between the institutional context and ease of knowledge transfer. Hypotheses developed based on the literature, and data has been collected in support of or to disprove the hypotheses. The key objective of the research is to determine how the institutional context of the nation influences the ease of transfer of knowledge (through measurement of the number of interventions for effective knowledge transfer).

4.2 Unit of analysis

The inquiry has made use of middle management of subsidiaries from developed, developing, and least developed countries of subsidiaries of a single organisation. These individuals have been exposed to the same knowledge framework from the corporate head quarters of the organisation to each of its subsidiaries. Appendix 1 provides a detailed overview of The Project's knowledge framework. The company has undertaken to convey a single message to the subsidiaries based in developed, developing and least developed countries with the expectation that the work will be carried out in the same way resulting in consistent outcomes at each subsidiary. That is, an increase in production and an increase in asset integrity by doing the right work in the right way and at the right time. As such the unit of analysis is the individual in subsidiaries located in developed, developing or least developed countries.

4.3 Population

The population consists of middle managers who are part of a subsidiary support team for the project and will be held accountable for ensuring that other employees at their subsidiary exhibit the required behaviours.

They are:

- based in subsidiaries in either developed, developing and least developed countries
- the recipient of knowledge from a corporate head office of a multinational company
- required to display a change in behaviour and practices resulting from the new knowledge transferred

4.4 Sample size and method

The full population (the middle management in the support team at each subsidiary) was polled.

A list of support team members was obtained from the project management office of the global project roll- out. Project managers for each project were personally contacted to confirm the contact details of their subsidiary support team members and any additional resources, where applicable.

The survey was distributed to middle managers in the company. Due to the good relationship between the researcher and the list of contacts, a high response rate was expected.

4.5 Data gathering process

Country level, subsidiary level and individual level data was gathered. The core of the evidence was obtained through a survey of individuals involved in the knowledge sharing process, particularly perceptual evidence, for example importance of learning. More objective evidence at the individual level (e.g. level of education of the relevant manager) was also obtained.

Evidence was gathered at the level of the subsidiary, this included the age of the subsidiary. Evidence was also gathered at a national level. This information included FDI as a percentage of GDP. Archival data sources were used to obtain this evidence.

The variables are explained in the sections that follow.

4.5.1 Hypotheses and Measurement

Table 4.1 below provides an overview of the constructs under investigation, the related hypotheses and the means of measurement.

Table 4.1 Hypotheses and measurement mechanism

<u>Constructs and Measures</u>		
<u>Hypotheses</u>	<u>Construct</u>	<u>Measurement mechanism</u>
H1a: There is a positive relationship between the importance of learning and ease of knowledge transfer	Learning orientation	Individual level variable: Questionnaire on learning orientation. Source: instrument by VandeWalle's (2001)
H1b: There is a positive relationship between a high level of education ease of knowledge transfer	Qualification	Individual level variable: Highest qualification
H1c: There is a positive relationship between a strong educational system and ease of knowledge transfer	Strong educational system	Country level Index: Human development index (World Bank, 2009)
H2a: There is a positive relationship between a high degree of trust and ease of knowledge transfer	Trust of foreigners	Individual level variable: Questionnaire on trust. Source: instrument by Mayer & Davis (1999); McAllister (1995)

H2b: There is a positive relationship between a high degree of foreign firms presence and ease of knowledge transfer	Presence of foreign firms	Country level Index: FDI net inflows as percentage of GDP (World Bank, 2009)
H2c: There is a positive relationship between openness to foreign firms and ease of knowledge transfer	Exposure to foreign firms	Country level Index: Index of economic freedom: Economic Freedom of the World 2009
H3a: There is a positive relationship between high perception of corruption and a reduced ease of knowledge transfer	Perception of corruption	Individual level variable: Questionnaire on perception of corruption. Source: instrument by Gbadamosi & Bello (2009)
H3b: There is a positive relationship between a low level of corruption and ease of knowledge transfer	Level of corruption	Country level Index: CPI (corruption perception index): ICRG (2009)
H3c: There is a positive relationship between high extent of strong developed systems of law and order and ease of knowledge transfer	Strength of authority systems	Country level Index: Law and Order index (POLCON): ICRG (2009)

4.5.2 Independent and control variables

For each of the country level, subsidiary level and individual level variables used in the study, the independent and control variables are outlined below. The justification for each variable is provided together with the coding used within the regression model. Independent variables are denoted by a [i] and control variables are denoted by a [c] following the variable name.

4.5.2.1 Country level

- Development status [i]: Developmental status of respondent based on country of origin was coded using the GDP per capita per country (World Bank, 2009). The data was normalised from a distribution of data consisting of a mean and standard deviation.

Table 4.2 Classification of respondent by development status

		GDP per capita (PPP USD)	
	Grouping	Country	UNDP (2009)
1	Developed	Australia	34,923
2		United States	45,592
3	Developing	Brazil	9,567
4		South Africa	9,757
5	Least	Tanzania	1,208
6	Developed	Ghana	1,334
7	Countries	Guinea	1,140

- Importance of learning [i]: Public spending on education (% of GDP), is an indicator of the importance a society places on education, level of education, and strength of the educational systems in place (see table 4.3).

Table 4.3 Country level Public spending on education

		Public spending on education (% of GDP) World Bank (2009)	
Grouping	Country		
1	Developed	Australia	0.05
2		United States	0.06
3	Developing	Brazil	0.05
4		South Africa	0.05
5	Least Developed Countries	Tanzania	0.05
6		Ghana	0.05
7		Guinea	0.02

- Strong education system [i]: According to UNDP (2009), a high human development index is an indicator in support of a strong educational system. Therefore strong educational system was coded using the HDI (see table 4.4).

Table 4.4 Country level Human development index (World Bank, 2009)

Grouping		Country	Human Development Index (HDI)
1	Developed	Australia	0.97
2		United States	0.96
3	Developing	Brazil	0.81
4		South Africa	0.68
5	Least Developed Countries	Tanzania	0.53
6		Ghana	0.53
7		Guinea	0.435

- Presence of foreign firms [i]: will be coded using FDI net inflows as a percentage of GDP. Foreign direct investment (FDI) is a measure of foreign ownership of productive assets (UNCTAD, 2009). To normalise this value it should be represented as a percentage of GDP or per capita. It is an indicator of the degree to which the country attracts FDI

Table 4.5 Country level FDI net inflows as a percentage of GDP (UNCTAD, 2009)

Grouping		Country	FDI Inflows as % GDP
1	Developed	Australia	0.274
2		United States	0.16
3	Developing	Brazil	0.183
4		South Africa	0.432
5	Least Developed Countries	Tanzania	0.372
6		Ghana	0.357
7		Guinea	0.537

- Openness to foreign firms [i]: Index of economic freedom was used to code this variable. The 2009 Index of Economic Freedom is based on ten economic

measures created by the Heritage foundation to measure the degree of economic freedom within the world's nations. These include: business freedom, trade freedom, monetary freedom, government size, fiscal freedom, property rights, investment freedom, financial freedom, freedom from corruption, and labour freedom. The index is a gauge to foreign investors on the freedom offered by the country in terms of promoting and ensuring ease of foreign direct investment. The ten freedoms are graded using a scale from 0 to 100, where 100 represents the maximum freedom. A score of 100 signifies an economic environment or set of policies that supports economic freedom

Table 4.6 Country level Index of economic freedom (Heritage Foundation, 2010)

Grouping		Country	Index of economic freedom
1	Developed	Australia	82.6
2		United States	78
3	Developing	Brazil	55.6
4		South Africa	62.8
5	Least Developed Countries	Tanzania	58.3
6		Ghana	60.2
7		Guinea	51.8

- Level of corruption [i]: coded using the CPI which is a public measure that indicates the perceived level of public-sector corruption in 180 countries and territories around the world (Transparency international, 2009). The indices describe the reduction of government and business efficiency through corruption activities. Zero indicates high corruption and ten represents low corruption

Table 4.7 Country level Corruption perception index (Transparency International, 2009)

Grouping		Country	Corruption perception index
1	Developed	Australia	8.7
2		United States	7.5
3	Developing	Brazil	3.7
4		South Africa	4.7
5	Least Developed Countries	Tanzania	2.6
6		Ghana	3.9
7		Guinea	1.8

- Strength of authority system [i]: Data from the POLCON database will be operationalised as an index ranging from 0 (low levels of law and order) to 10 (high levels of law and order). The variable is decomposed into two measures that assess the objectiveness, power and adherence of law and order in each country. Previous research has demonstrated the validity of this as a measure (Judge et al, 2008).

Table 4.8 Country level Law and order index (Henisz, 2010)

		Political constraints	
Grouping	Country	index/ Law and order index	
1	Developed	Australia	6
2		United States	5
3	Developing	Brazil	3
4		South Africa	3
5	Least Developed Countries	Tanzania	5
6		Ghana	3
7		Guinea	3

4.5.2.2 Subsidiary level

Subsidiary level variables were also controlled as these variables have been prominent in knowledge transfer literature as barriers to knowledge transfer (Lord & Ranft, 2000; Lyles & Salk, 1996; Tsang, 2002; Schultz, 2001; Pérez-Nordtvedt, Kedia, Datta & Rasheed, 2008)

- State of operation [c]: Subsidiary state of operation was also considered as a control variable. Business as usual is the ideal situation for knowledge transfer as there is no situation (political or otherwise) that affects focus on the project. Two statuses have been identified, these are operating and production constrained. Subsidiaries that have experience production constraints is due to factors outside the subsidiaries control such as political instability and environmental restrictions posed by government.

Table 4.9 Subsidiary status

Subsidiary status	Data representation
Operating	0
Production constrained	1

- Subsidiary size [c]: Subsidiary size is controlled as the larger the subsidiary the lower the likelihood of ease of knowledge transfer (Minbaeva et al, 2003). For each subsidiary, the number of production ounces for the subsidiary is used to code subsidiary size.

Table 4.10 Subsidiary size based on production ounces (Company, 2009)

Subsidiary institutional status	Subsidiary name	Production ounces per annum
Developed	Subsidiary A	410,000
	Subsidiary B	218,000
Developing	Subsidiary C	329,000
	Subsidiary D	336,000
	Subsidiary E	520,000
	Subsidiary F	30,000
	Subsidiary G	158,000
Least Developed countries	Subsidiary H	381,000
	Subsidiary I	190,000
	Subsidiary J	316,000
	Subsidiary K	272,000

- Number of email communications [i]: Members of the corporate team responsible for the project were requested for a record of interactions between themselves and the subsidiaries. The request was made to seven members of the corporate team. Four members responded. The results are discussed in Chapter 5.

4.5.2.3 Individual level

- Previous working relationship with member of the corporate team [c]:
Previous working relationship with a member of the corporate team can affect the respondent's ease of knowledge transfer (Minbaeva et al, 2003).

Table 4.4 Previous relationship with corporate team

Relationship status	Data representation
No relationship with corporate team member	0
Relationship with corporate team member	1

- Number of years in host country [c]: was coded as an actual numeric value in years
- Importance of learning [i]: the survey instrument was used to gauge the importance of learning from the candidate. The results are discussed in Chapter 5.
- Qualification [i]: was coded as per table 4.5 below

Table 4.5 Level of qualification

Highers qualification	Data representation
High school graduate	1
Diploma	2
Degree	3
Post graduate degree or higher	4

- Trust of foreigners [i]: the survey instrument was used to gauge the trust of foreigners from the candidate. The results are discussed in Chapter 5.
- Perception of corruption [i]: the survey instrument was used to gauge the candidates' perception of corruption. The results are discussed in Chapter 5.

4.5.3 Outcome variable: Number of training session

An individual level outcome variable was selected as a proxy for ease of knowledge transfer. This is the number of interactions for knowledge transfer as it represents efficiency of knowledge transfer representing speed (Perez-Nordtvedt et al, 2008). As such represents ease of knowledge transfer. The dependent variable *number of training sessions attended* was selected to represent the ease of knowledge transfer, where fewer training sessions indicates that the individual gained an understanding of the knowledge with less difficulty than a respondent who attended more training sessions. Thus, a higher number of training sessions indicates lower ease of knowledge transfer

4.5.4 Research instrument

A research instrument was used to elicit information to support the individual level independent and control variables. The research instrument was a detailed electronic self administered questionnaire. Respondents were emailed a letter positioning the research, as well as a link to an online survey.

The survey was developed after an extensive review of the relevant literature on knowledge transfer as well as perceptions that impact learning, trust and authority. The items used were all based on previous research.

The questionnaire comprised of three parts.

Part one: comprising instructions to guide the respondent to successfully completing the questionnaire as well as a consent statement (respondent will remain anonymous, no identifiers will be recorded)

Part two: a series of general questions to segment the respondent in terms of his demographic profile and background to establish the institutional elements to which the respondents were primarily exposed (developed, developing or least developed country), and existing location (institutional elements currently being exposed to). Control data was also gathered as part of the research instrument.

Part three: questions regarding importance of learning, perceptions of trust, and perceptions of law and order. Existing scales by VandeWalle (2001), Mayer & Davis (1999); McAllister (1995) and Gbadamosi & Bello (2009) were used for each section respectively.

Where necessary, the items were adapted to ensure the question asked was relevant to the current research, for example “If people knew more about this individual and his/her background, they would be more concerned and monitor his/her performance more closely” was adapted to “If people knew more about members of the corporate team, and their background, they would be more concerned and monitor their performance more closely.”

The survey comprised 41 items and survey sections were ordered to ease the respondent into providing information in a logical flow. Questions regarding authority and perceptions of corruption were asked last to ensure key responses are captured without the respondent believing the questionnaire became too personal.

The measurement instrument for Part three comprised five point Likert scale (1= strongly disagree to 5 = strongly agree). Key limitation of administering a questionnaire is non-response bias and response bias.

Items were added to the survey to ensure responses could be filtered and the developmental status were not compromised. These included questions regarding “Country of birth” and “Number of years spent living in country of birth”, as a significant time spent living in country of birth inherently impacts the normative and cognitive institutional models of individuals.

“Country in which tertiary education was completed”, “Country in which you are working” and “Number of years spent working in this country”, are questions to ensure normative and cognitive institutions are grounded within a country’s specific development status as a respondent who is a frequent traveller may have been exposed to and internalised multiple institutional contexts.

The electronic survey distribution tool, Survey Monkey, was used to distribute the survey. The purpose and context of the survey was detailed in the front page along with a non disclaimer indicating that the survey was voluntary and anonymous. The survey questions are detailed in Appendix 2.

4.5.5 The Pilot Survey

A department within the company was selected as a pre-test environment. The pilot survey was distributed to 15 South African middle managers who were exposed to the same knowledge as the intended sample. However, they are not involved in the

implementation of the project and were therefore not part of the targeted population. The aim of the pre-test was to establish ease of readability and ease of use of the questionnaire. The pre-test survey was handed out in paper format so respondents could comment on the survey – these comments were considered and the survey revised, where necessary.

The results demonstrated that some survey questions were ambiguous. These were specifically the control questions and were amended to remove any ambiguity.

4.6 Data analysis

Once the survey was received by the research population, the first step undertaken was a high-level analysis of data and removal of responses that were not consistent with defined normative cognitive and regulative institutions. This was done by evaluating responses in terms of where the respondent spent a significant amount of time in order that normative, cognitive and regulative institutions impact their ease of knowledge transfer.

Descriptive statistics was used to interpret the responses. Inferential statistics was then used to assess the significance of the hypotheses. IBM SPSS Statistics version 19 was used as the statistical package for this analysis.

- *Internal consistency and reliability* was measured using Cronbach alphas
- *Stepwise regression* was conducted to investigate whether the independent variables could predict the dependent variable. That is, ease of knowledge transfer given the difference in normative, cognitive and regulatory institutions of developed, developing and LDCs.

4.6.1 Regression and hypothesis testing

Once data was gathered, stepwise regression analysis was used to identify significant predictors of ease of knowledge transfer. Regression analysis evaluates the relationship between a dependent variable and several independent variables. These can be represented as X and Y. For each subject, where both X and Y are known, the regression creates a relationship referred to as the regression relationship (Cohen, Cohen, West & Aiken, 2003; Aiken & West, 1991). Where there is a direct correlation between X and Y, the regression relationship yields a straight line. If this relationship is a slope, it can have a scientific interpretation (Zikmund, 2003).

This results in a regression relationship, typically illustrated graphically, to best determine the answer to the question “what is the best predictor of.” Within the context of the existing area of research between an MNC parent and its subsidiaries in developed, developing and LDC, ease of knowledge transfer is the dependent variable and is

represented by using the outcome variable outlined in section 4.5.3 (the number of training session attended).

The coefficient of multiple determination will investigate the percentage of variance in the dependent variable by the variation in the independent variables.

4.6.2 Correlation coefficient R

The degree to which two or more predictors (independent variables) are related to dependent variables is expressed with the correlation coefficient R. R is the square root of r-square. R assumes the value between zero and one and can be interpreted using the signs on the slope b .

If b is positive, then the relationship between the independent variable and dependent variable is positive – that is the stronger the educational system, the greater the ease with which knowledge transfer can take place. If the coefficient b is negative, then the relationship is negative. When the coefficient b is zero, it can be interpreted that no relationship exists between the variables.

In regression, the mathematical relationship yields an r-square statistic for the model. This model also highlights the extent to which each institutional element contributes to the ease of knowledge transfer while controlling for the impact of other factors.

Chapter 5: Presentation and discussion of results

The aim of the research was to investigate the ease of cross border knowledge transfer from the head office of a MNC to its subsidiaries based in developed, developing and least developed countries. As such, the objective is to determine if the institutional context of a nation affects the ease of knowledge transfer. Scott's model of institutional theory (1995) is used as a framework for the study. The elements of normative, cognitive and regulatory institutions are measured against ease of knowledge transfer, within three institutional sectors: education systems, embeddedness of foreign firms and authority systems.

This chapter relates the findings of the data analysis and resulting statistical tests.

5.1 Responses

The survey was electronically distributed to 121 contacts, of which there were 81 complete and usable responses. This is a 67% response rate. The relationship between the researcher and the respondents encouraged completion of the survey.

5.2 Descriptive statistics

The descriptive statistics is an overview of the characteristics of the sample population.

The elements demonstrated are the developmental statuses, country of occupation, level of qualification of respondents, and number of email communication between corporate and subsidiary teams to which knowledge was transferred.

This information is summarised in table 5.1 and illustrated in the figures that follow.

Table 5.1 Summary of sample population descriptives

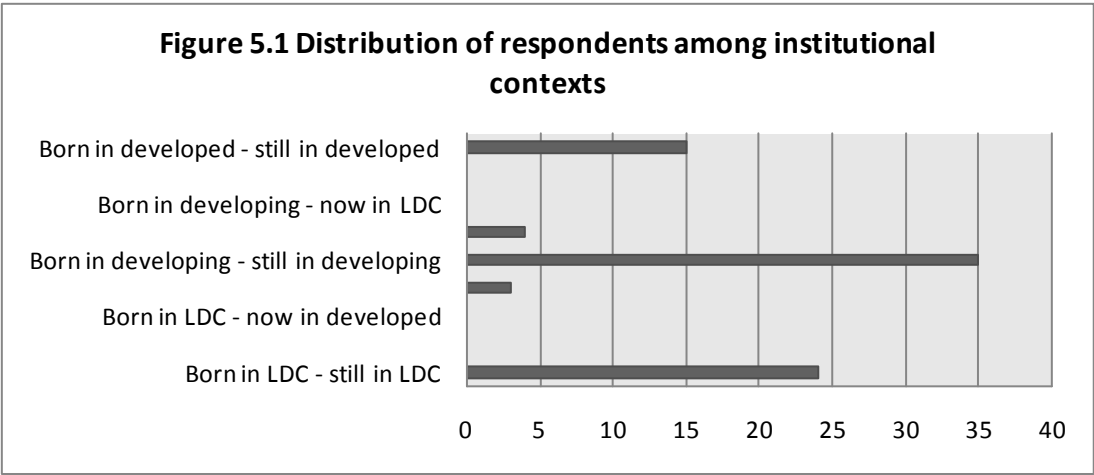
Number of respondents	Number of Recipients	Number of Respondents	Distribution of responses	Response Rate
Total	121	81	-	67%
Per development level				
Developed	27	18	22%	67%
Developing	59	40	49%	68%
Least developed	35	23	28%	66%
By country				
Australia	21	15	19%	71%
Brazil	16	8	10%	50%
Ghana	20	15	19%	75%
Guinea	4	4	5%	100%
South Africa	43	28	35%	65%
Tanzania	11	8	10%	73%
United States	6	3	4%	50%
Per level of project maturity				
Implementation	29	12	15%	41%
Post go live	92	69	85%	75%

The response rate per developmental state is balanced across the respondents. Response rates per country is 50% and over for each country. The size of the teams in the United States and Guinea where very small, whilst the number of respondents in South Africa is high due to the number of operating sites in South Africa.

5.2.1 Developmental status

Based on the data received, country of birth remains the most applicable indicator to map individual institutional context and shows little dilution of institutional context. There is a particularly large representation of respondents from developing countries due to the large number of subsidiaries that are based in developing countries.

Figure 5.1 Distribution of respondents

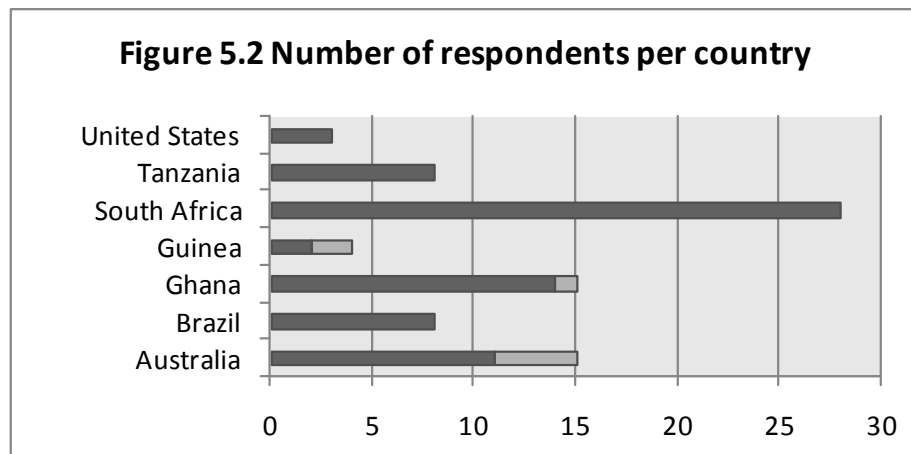


It is also clear that there is not a significant number of middle managers in the project who have migrated to other countries. It is only a handful of managers from developing countries that have migrated to developed and least developed countries. After further investigation into these respondents, it was discovered that they spent an average of 6 years in the new country as expatriates. Therefore, their country of birth, rather than country of occupation will be used as the marker of the normative, cognitive and regulative institutions that they have been exposed to.

5.2.2 Country of occupation

The data was further classified based on country of occupation. South Africa accounted for the largest number of respondents due to higher number of projects active within South Africa.

Figure 5.2 Number of respondents per country of occupation



Based on the investigations carried out for 5.2.1, it was discovered that the respondents from the developing countries had been relocated to Australia, Ghana and Guinea as part of their expatriate assignments. This is represented as the lighter shade of respondents in the graphic

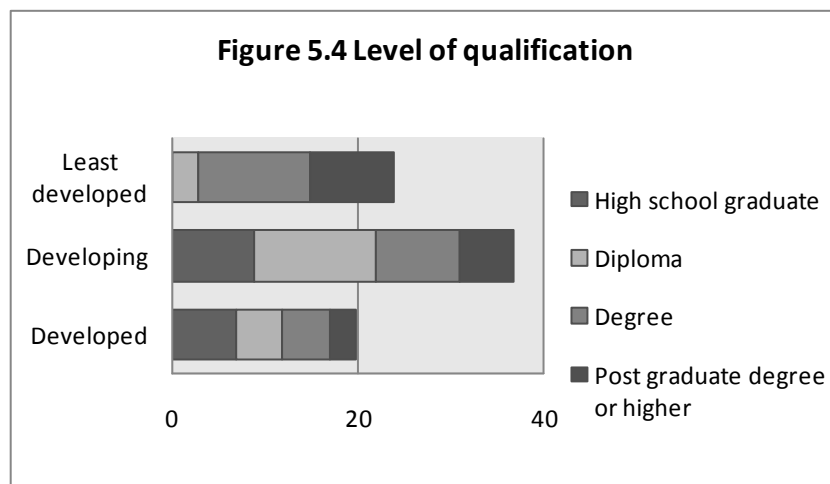
5.2.3 Level of qualification

The results of the average qualifications of the respondents was high, where 80% of the respondents have a qualification of a diploma, degree or higher. We can thus expect a relative ease of knowledge transfer due to higher educational qualification. This research

will test this hypothesis (H2b). The details of the level of qualification are shown in figure 5.3 below.

It is interesting to note that that the respondents in least developed countries have the highest education qualification. Education can be interpreted as the key differentiator for LDCs. It is also interesting to note that respondents in LDCs have the highest number of post graduate qualifications, whilst developed countries have the lowest number of respondents with post graduate qualifications. This is aligned to the theory in the literature indicating that LDC use schooling and qualifications as a signal of competence as opposed to developed nations that use actual performance as a signal of competence.

Figure 5.3 Level of qualification



5.2.4 Number of email communications

Members of the corporate team responsible for the project were requested for a record of interactions between themselves and the subsidiaries. The request was made to 7 members of the corporate team. Four members responded. Their aggregated responses already suggest that there are differences in the interactions between the MNC head office and subsidiaries in different institutional contexts.

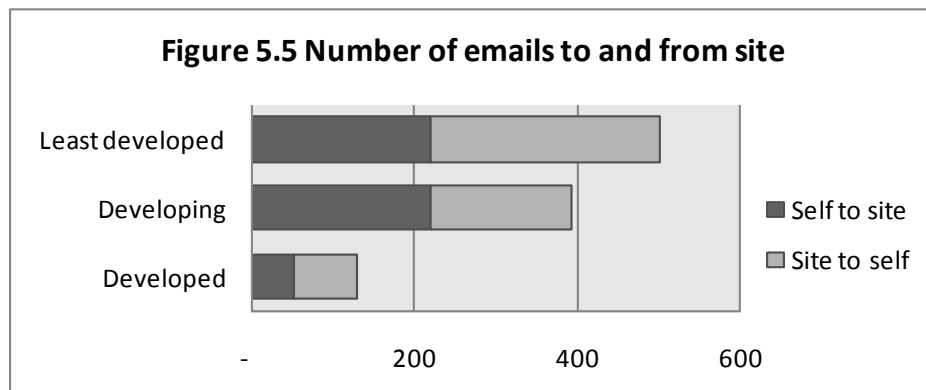
Table 5.2 Number of email interactions per development level

Number of emails (average per business)	Self to site	Site to self	Total
Developed	54	78	132
Developing	221	172	393
Least developed	222	281	503

The number of interactions between the corporate team and the subsidiary increases as the level of development of the countries decreases. One of the factors that could impact this is the maturity of the country’s institutions. The more developed the country, the less frequent the interactions for clarification and understanding of the project requirements,

of the underlying theory or of the application of the process. The research proposes that this may be due to the difference in development of the institutions of these nations and regression analysis will be used to determine the extent of the relationship, and the relative importance of different institutional elements. This data was obtained to add value and further interpret the results from the regression model. This data was not used in the regression model due to the limited number of data points which would skew the distribution and regression results. The results are graphically illustrated in figure 6.4.

Figure 5.4 Number of email communications



5.3 Reliability and internal consistency

The survey was tested to determine the reliability and internal consistency of the scales relating to *Importance of learning*, *Trust of foreigners* and *Perception of corruption*.

The initial results indicated a good internal consistency (table 5.3) for all the items for the *Importance of learning*, as such, factor analysis was not run.

Table 5.3 Cronbach Alpha for Importance of Learning

Reliability Statistics	
Cronbach's Alpha	N of Items
.789	4

However, the results indicated poor internal consistency for constructs *Trust of foreigners* and *Perception of corruption* as the values were less than 0.7.

Dimension reduction and factor analysis were used to determine if there were multiple underlying constructs within these scales. In analyzing the Scree plots for *Trust of*

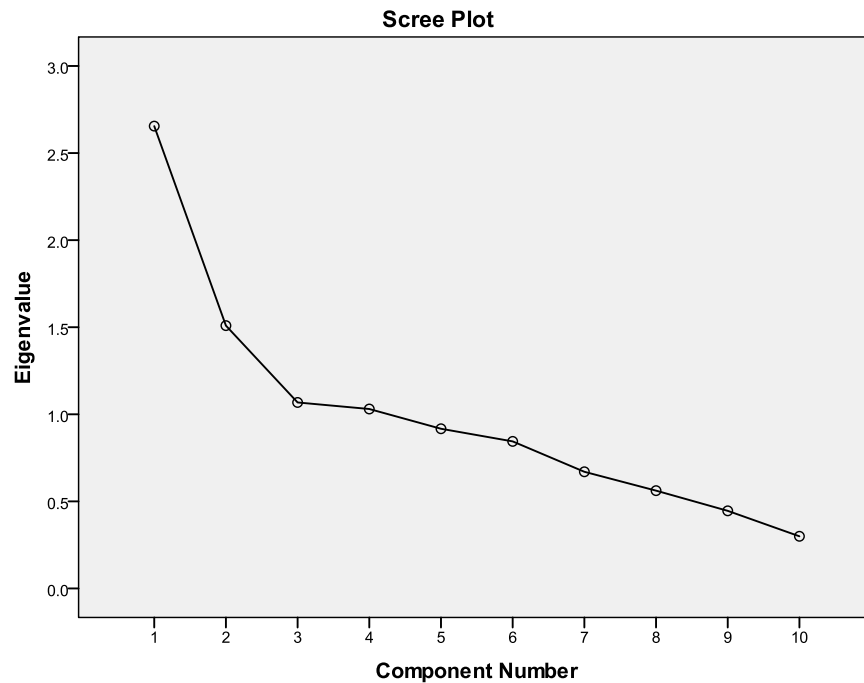
foreigners, it is evident that the related questions in the survey made reference to three factors (see table 5.4 and figure 5.5).

Table 5.4 Eigenvalues for Trust

Construct: Trustworthiness						
Total Variance Explained						
Component	Initial Eigenvalues			Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.655	26.547	26.547	2.655	26.547	26.547
2	1.509	15.092	41.639	1.509	15.092	41.639
3	1.068	10.679	52.318	1.068	10.679	52.318
4	1.030	10.304	62.621	1.030	10.304	62.621
5	.917	9.170	71.791			
6	.844	8.444	80.235			
7	.670	6.699	86.934			
8	.562	5.616	92.550			
9	.446	4.456	97.005			
10	.299	2.995	100.000			

Extraction Method: Principal Component Analysis.

Figure 5.5 Trust Scree plot



Based on these results, factor analysis was performed. The items illustrating a high reliability are highlighted (table 5.5) and used to determine which *Trust of foreigners* items should be removed to improve the Cronbach Alpha of the construct.

Table 5.5 Eigenvalues per factor

	Questionnaire		Component
			1
1	One should be very cautious with strangers (in general)	Trust1	.132
2	Most experts tell the truth about the limits of their knowledge	Trust2	.452
3	Most people can be counted on to do what they say they will do	Trust3	.597
4	These days, you must be alert or someone is likely to take advantage of you	Trust4	.162
5	Most adults are competent at their jobs	Trust5	.619
6	Work colleagues from a foreign country approach their job with professionalism and dedication	Trust6	.540
7	Based on his understanding of BPF content (the person who educated you on BPF), I see no reason to doubt his/her competence	Trust7	.602
8	I can rely on members of the central team (based in corporate), not to make my job more difficult by careless work	Trust8	.777
9	Other work associates of mine within my team, who must interact with members of the central team (based in corporate) consider them to be trustworthy	Trust9	.637
10	If people knew more about members of the central team (based in corporate), and their background, they would be more concerned and monitor their performance more closely	Trust10	.057

Factor 1 was selected and items 1, 2, 4 and 10 were removed from the survey results, which yielded a Cronbach alpha value of 0.713 which is considered acceptable.

The same process was followed for survey questions regarding the *perception of corruption*. The results indicate three factors that explain the variance in the survey, with the first factor clearly accounting for the greatest variance (table 5.6).

Table 5.6 Eigenvalues for Perception of law and order

Construct: Perception of Law and Order						
Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.674	36.739	36.739	3.674	36.739	36.739
2	1.239	12.386	49.125	1.239	12.386	49.125
3	1.049	10.494	59.619	1.049	10.494	59.619
4	.964	9.641	69.260			
5	.865	8.651	77.911			
6	.629	6.291	84.203			
7	.582	5.824	90.027			
8	.424	4.236	94.262			
9	.370	3.695	97.958			
10	.204	2.042	100.000			
Extraction Method: Principal Component Analysis.						

The factors illustrating high reliability are highlighted in table 5.7 and survey items that were highly correlated with factor 1. A new Cronbach alpha for *Perception of Corruption* of 0.812 indicates greater consistency of the selected survey items.

Table 5.7 Eigenvalues per factor

	Questionnaire		Component 1
1	Corruption is a major problem in the country I live in (this country)	LawandOrder1	.768
2	Corruption is culturally acceptable in this country	LawandOrder2	.545
3	Bribery and corruption is not common among very religious people	LawandOrder3	.186
4	Bribery and corruption is more common among foreigners who live in this country	LawandOrder4	.540
5	The level of corruption in this country is exaggerated by the international community	LawandOrder5	.149
6	Bribes are expected in daily life in this country	LawandOrder6	.787
7	Changes in cultural values has increased corruption in this country	LawandOrder7	.621
8	Politicians in this country are generally more corrupt than ordinary citizens	LawandOrder8	.586
9	Citizens of this country are generally not corrupt individuals	LawandOrder9	-.657
10	Based on ou country of origin, corruption is a major problem in this country	LawandOrder10	.811

The resulting Cronbach alphas are higher than 0.7 demonstrating good internal consistency (table 6.8). Overall summary of reliability of survey data selected to develop the regression model are indicated in Table 5.8.

Table 5.8 Reliability of survey data

Construct	Cronbach Alpha	# of Items
Learning orientation	0.769	4
Trust of foreigners	0.713	6
Perception of corruption	0.812	7

5.4 Regression model results

A regression model was run and the outcome of the regression model is illustrated and explained in the sections that follow.

As indicated in chapter 5, the number of interactions for knowledge transfer is an indicator of the ease of knowledge transfer. The dependent variable *number of training sessions attended* was selected to represent the ease of knowledge transfer, where fewer training sessions indicates that the individual gained an understanding of the knowledge with less difficulty than a respondent who attended more training sessions. Thus, a higher number of training sessions indicates lower ease of knowledge transfer.

Anova (analysis of variance) was used to firstly determine how well the model fit the data. The resulting model is highly significant (figure 5.6) with an strong F-value

Figure 5.6 ANOVA outcome variable: Number of emails to site

ANOVA^b

Model	Sum of Squares	df	Mean Square	F	Sig.
1					
Regression	114.658	14	8.190	7.473	.000 ^a
Residual	37.260	34	1.096		
Total	151.918	48			

a. Predictors: (Constant),

Control variables: Previous working relationship, State_of_operation, Years in host country, Subsidiary_Size, Development status, Times travel outside host

Educational systems: Importance of Education_survey, Importance of Education_index, Strong educational system, Qualification

Presence of foreign firms: Trust of foreigners, Presence of foreign firms, Openness to foreign firms

Authority systems: Perception of corruption, Strength of authority systems, Level of corruption

The r-square is the indicator of how well the model fits the data. The adjusted R square coefficient measures the proportion of the variation in the dependent variable that is explained by the independent variable. The adjusted R square is adjusted for the number of predictors in the model and overestimates the strength of the association between the variables.

Figure 5.7 Adjusted R-square statistic

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.869 ^a	.755	.654	1.04685

a. Predictors: (Constant),

Control variables: Previous working relationship, State_of_operation, Years in host country, Subsidiary_Size, Development status

Educational systems: Importance of Education_survey, Importance of Education_index, Strong educational system, Qualification

Embeddedness of foreign firms: Trust of foreigners, Presence of foreign firms, Openness to foreign firms

Authority systems: Perception of corruption, Strength of authority systems, Level of corruption

The method of interpretation is as follows: if the adjusted r-square is 0.654 (figure 5.7) then we know that the variability of the Y variables around the regression line is 1-0.654 times the original variance. Hence we can explain 65.4% of the original variance and there

is 34.6% residual variability. Within the context of the research the adjusted r-square statistics will be expected to show the extent to which each institutional element contributes to ease of knowledge transfer while controlling for the impact of other factors. The institutional element that accounts for the highest r-square value accounts for a larger portion of the variation and may be the most significant driver of ease of knowledge transfer. An adjusted R-square of 65.4% is considered highly acceptable as it indicates that 65.4% of the total variation of ease of knowledge transfer based on interactions with site is described by the model.

Further analysis of the model indicated that the Variance Inflation Factor (VIF) associated with the variables in the regression model was significantly less than ten (Cohen et al, 2003; Aiken & West, 1990). The variable corruptions perceptions index was removed from the model as it resulted in multi-collinearity with the strength of authority systems variable. As such the remaining variables indicate multi-collinearity is not a problem (table 5.9).

After evaluating the model fit, the relative importance of each independent variable in predicting the dependent variable was assessed. Table 4.10 details the sensitivity of the dependent variable to the independent variables. The significant value was indicated as follows;



- Highly Significant = 0.01 ***
- Significant = 0.05 **
- Marginally Significant = 0.1 *

Table 5.9 Linear regression coefficients

		Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	8.698	4.577		1.900	.066		
	Control variables							
	Country level							
	Development status (GDP/capita)	.121	.350	.068	.346	.732	.186	5.379
	Subsidiary level							
	State_of_operation	.703	.556	.131	1.265	.215	.674	1.483
	Subsidiary_Size	.000	.000	.043	.403	.689	.626	1.597
	Individual level							
	Previous working relationship	.363	.361	.101	1.006	.322	.710	1.409
	Years in host country	.013	.034	.046	.371	.713	.459	2.178
	Education							
	Individual level							
	H1a_Importance of learning (survey)	-1.140	.335	-.368	-3.399	0.002***	.614	1.629
	H1b_Qualification	.017	.207	.010	.081	.936	.466	2.144
	Country level							
	H1a_Importance of learning (Public spending per capita)	-42.977	19.283	-.378	-2.229	0.033**	.251	3.992
	H1c_Strong educational system (HDI)	-2.281	.493	-1.050	-4.625	0.000***	.140	7.150
	Presence of foreign firms							
	Individual level							
	H2a_Trust of foreigners (survey)	.142	.375	.040	.378	.708	.630	1.588
	Country level							
	H2b_Presence of foreign firms (FDI % of GDP)	-10.597	3.694	-.580	-2.869	0.007***	.177	5.657
	H2c_Openness to foreign firms (Index of economic freedom)	1.310	.535	.471	2.448	0.02***	.195	5.135
	Authority systems							
	Individual level							
	H3a_Perception of corruption (survey)	.968	.323	.359	2.997	0.005***	.503	1.990
	Country level							
	H3b_Level of corruption (CPI)	removed due to collinearity with Strength of Authority systems						
	H3c_Strength of authority systems (POLCON)	.135	.418	.067	.322	.749	.165	6.047

a. Dependent Variable: Trainings_attended

The results of the model indicate that there are multiple highly significant independent variables that predict ease of knowledge transfer. These are:

- *Importance of learning* using the individual level data from the survey as a indicator (beta = -0.368)
- *Importance of learning* using the country level index as a indicator (beta = -0.378)
- *Strength of the educational system* (beta = -1.050) represented by HDI
- *Presence of foreign firms* (beta = -0.580) represented by FDI as a percentage of GDP
- *Openness to foreign firms* (beta = 0.471) represented by the index of economic freedom
- *Perception of corruption* using the individual level data from the survey (beta = 0.359)

The standardised coefficient Beta is an indication of the strength of the independent variable in predicting the ease of knowledge transfer. Hence the *strength of education system* is the strongest predictor whilst *perception of corruption* is the poorest predictor of ease of knowledge transfer.

5.4.1 Assessing the model against the hypotheses: Education as an institutional sector

Results presented in table 5.8 indicate that Education as an institutional sector negatively influence the number of training sessions attended. That is, as these systems improve, the number of trainings reduces.

Number of trainings is a proxy for ease of knowledge transfer, and the two variables (number of trainings and ease of knowledge transfer) are negatively associated. As such, the model indicates that Education as an institutional sector positively influences ease of knowledge transfer. This is unpacked based on the individual hypotheses for education as an institutional sector.

Education as a normative institution: The *importance of learning* is an individual level variable derived from the survey instrument and measures the importance or weight the respondent places on education. The *importance of learning* is also a country level index as an indication of the emphasis a country places on education and learning, and therefore we have a dual perspective as inputs in the model.

Both predictors have a negative relationship with the outcome variable and can be interpreted as follows:

As the *importance of learning* decreases, the number of interactions to clarify knowledge increases.

Due to the inverse associated between number of interactions and ease of knowledge transfer, we know that as the number of interactions through training increases, the ease of knowledge transfer decreases, as more interactions are required to clarify and confirm understanding of information communicated.

As such, the less the importance country places on education, the lower the ease of knowledge transfer.

This research hypothesized that

H1a: there is a positive relationship between importance of learning and ease of knowledge transfer

The model confirms this hypothesis.

It is thus arguable that the more poorly developed the normative institutions of education, the lower the ease of knowledge transfer.

Education as a cognitive institution hypothesized that the more qualified the respondent, the greater the ease of knowledge transfer. The model does not indicate any significance for this hypothesis. This outcome is discussed further in Chapter 6.

Education as a regulative institution: The *strength of the educational system* is also a highly significant predictor of the outcome variable number of interactions with site, where for every 1.050 point decrease in the strength of the educational system (represented by human development); there is a relative increase in the number of interactions. From a regulatory perspective, a poorly developed regulatory institution has a negative effect on ease of knowledge transfer.

This research hypothesized that

H1c: there is a positive relationship between a strong educational system and ease of knowledge transfer

The model supports this hypothesis.

5.4.2 Assessing the model against the hypotheses: The embeddedness of foreign firms as an institutional sector

In assessing the fit of the model to the independent variable, the country level indices played a significant role in predicting the model. The variables *presence of foreign firms* and *openness to foreign firms* were highly significant and represent extent to which the nation is exposed to foreign companies as familiarity with foreign firms increases the degree with which exchanges take place (Eden & Miller, 2004).

The model did not provide any indication that there is a relationship between the normative institution of *Trust of foreigners* and ease of knowledge transfer and this will be explored further in Chapter 6.

The presence of foreign firms as a cognitive institution: performs well in predicting the outcome variable, and has a negative relationship to number of interactions. That is, as the presence of foreign firms decreases, the number of interactions increases. This is a country level index and indicates that a poorly developed cognitive institution does in fact have a relationship to ease of knowledge transfer.

This research hypothesized that

H2b: there is a positive relationship between a high degree of foreign firm presence and ease of knowledge transfer

The model thus supports this hypothesis.

Openness of foreign firms as a regulatory institution: is positively correlated to the number of interactions. Thus, as the openness to the number of firms increases, the number of interactions increases.

This research hypothesized that

H2c: there is a positive relationship between openness to foreign firm and ease of knowledge transfer

The results of the model indicate that:

There is a negative relationship between openness to foreign firm and ease of knowledge transfer

Openness to foreign firms represents a regulatory institution and thus the nature of development of the regulatory institution of foreign firm presence has a relationship to ease of knowledge transfer, the relationship is the opposite of that which was expected and this relationship will be explored further in Chapter 6.

5.4.3 Assessing the model against the hypotheses: Authority systems as an institutional sector

Perception of corruption as a normative institution: Within the model, individual level statistics played an important role in predicting the model. The *perception of corruption* within the country is highly significant in predicting the outcome variable. It is an individual level variable and represents the development of the normative institution and its relationship with ease of knowledge transfer.

The nature of the relationship with number of interactions is positive, that is, as the *perception of corruption* increases, the number of interactions increases. This indicates a greater number of interactions to confirm and clarify information and thus poor ease of knowledge transfer.

This research hypothesized that

H3c: there is a positive relationship between high perception of corruption and low ease of knowledge transfer

The model supports this hypothesis.

The cognitive and regulative institutions within the authority systems did not yield any significance in the model and this will be explored as part of the findings in Chapter 6. The

variable strength of authority systems was removed from the model as it resulted in multi-collinearity with the corruptions perceptions index.

5.4.4 Control variables

No interesting results could be interpreted from the control variables as part of the study and they did not indicate any relationship to the outcome variable.

Chapter 6: Discussion of Findings

6.1 Summary of Findings

The outcome variable proved very relevant to the study with a high adjusted r-square value. The findings are summarised for each hypotheses within table 6.1, which highlights those hypotheses that are supported by the model. The findings indicate that within each institutional sector, the level of development of the same institutional pillars does not enable ease of knowledge transfer, but rather it is a combination of the institutional pillars for each institutional sector that promotes ease of knowledge transfer.

Table 6.1 Status of Hypotheses

<u>Hypotheses</u>	<u>Education systems</u>	<u>Openness to foreigners</u>	<u>Law and order systems</u>
<u>Normative</u>	H1a: There is a positive relationship between the importance of education and ease of knowledge transfer Hypothesis supported	H2a: There is a positive relationship between a high degree of trust and ease of knowledge transfer	H3a: There is a positive relationship between high perception of corruption and a reduced ease of knowledge transfer Hypothesis supported
<u>Cognitive</u>	H1b: There is a positive relationship between a high level of education ease of knowledge transfer	H2b: There is a positive relationship between a high degree of foreign firms presence and ease of knowledge transfer Hypothesis supported	H3b: There is a positive relationship between a low level of corruption and ease of knowledge transfer
<u>Regulative</u>	H1c: There is a positive relationship between a strong educational system and ease of knowledge transfer Hypothesis supported	H2c: There is a positive relationship between openness to foreign firms and ease of knowledge transfer Hypothesis supported Significant in the opposite direction to hypothesized	H3c: There is a positive relationship between high extent of strong developed systems of law and order and ease of knowledge transfer

6.2 Discussion of findings

Drawing on theoretical perspectives from institutional theory and cross border knowledge transfer, this study builds and tests a theoretical model of international knowledge transfer. The objective of the research was to determine how the institutional context of a nation influences the ease of knowledge transfer. The managerial impacts included optimization of the number and means of knowledge transfer initiatives based on the findings of the research.

This is achieved by identifying three institutional sectors: education, presence of foreign firms and authority systems. Based on the level of development of these institutions in developed, developing and LDCs, the research proposed that the ease of knowledge transfer will vary.

Whilst previous literature evaluated institutional theory primarily from an economic perspective, evaluation of knowledge transfer from an institutional perspective has been limited – specifically when evaluating knowledge transfer within specific institutional sectors within Scott's framework of normative, cognitive and regulative institutions, as outlined in this study.

In assessing the impact of educational sectors on knowledge transfer, the study indicated that normative and regulatory educational institutional variables have a significant impact on the relationship with ease of knowledge transfer. These variables are the *importance of learning* and the *strength of the educational system*. It has been observed that if the source country develops mental models with emphasis on education through stressing minimum schooling requirements, improving school quality, and making provision for educational institutions to fuel demand for knowledge (Buchmann & Hannum, 2001; Cardoso & Oliveira, 2007), we can expect a greater ease of knowledge transfer and the speed associated with knowledge transfer is improved.

The results also indicate that regulatory educational institutions impact knowledge transfer. Respondents in countries that have emphasized education through setting up systems and processes to strength the quality and delivery of knowledge have illustrated an ease of knowledge transfer.

Whilst a high level of education was measured as a cognitive educational institution variable, it did not present any significant outcomes. Hence, within the confines of this research, a high qualification bears no relationship with knowledge transfer. It is important to note that the descriptive statistics highlighted that LDCs have a higher number of post graduates as compared to developed countries. Thus a pertinent question to ask is, if this is not due to the *importance of learning*, what are the reasons for a higher

education attainment? One can argue that education is used as a filtering or selection mechanism in LDCs. Schooling is an important signal within LDCs (Strobl, 2004) and employers use a high degree qualification as a proxy for intelligence, ability and character. The inflation in higher education in LDCs may be as a result of a population keeping pace with government induced qualification inflation rather than attaining benefits associated with higher education qualifications. That is, gaining benefits for themselves and their surrounding society through transferable skill sets and becoming a knowledge society.

This is opposed to developed countries like Australia and the US, where a multitude of employment opportunities exist without a higher education qualification due to the advancements of the labour markets (Brown, 2006). In fact it is not the educational attainment but the attitude to education that is of primary concern.

These findings have important managerial implications. Where time and resources are restricted for knowledge transfer initiatives, knowledge dissemination to developed countries should be the initial focus area. Rather than focusing on highly qualified resources when transferring knowledge, identify those candidates with highly developed normative educational institutions and from education contexts that demonstrate strong educational systems.

Therefore, whether the project is resource constrained or has to be optimized, focus on developed and developing countries is a quick win for building critical mass prior to tackling least developed countries.

Secondly, the research evaluated embeddedness of foreign firms as an institutional sector –particularly the reliance on trust to facilitate relationships, degree of presence of foreign firms to increase familiarity with outside ways of working and openness to foreign firms from a regulatory perspective. It can be observed that the presence of foreign firms as well as openness to foreign firms is correlated to ease of knowledge transfer.

The research supports the hypothesis that cognitive frameworks developed through social interactions, particularly with foreign firms, does impact ease of knowledge transfer. Pérez-Nordtvedt et al (2008) conclude that strong relationships, make is easier for the recipient to comprehend the knowledge transferred as well as impacts the economics of knowledge transfer. The greater the social interactions between foreign and local firms in fostering relationships and trust and involving multiple interactions, the greater the ease of knowledge transfer. Therefore the model supports the theory of Tseng & Kuo (2009) for cross border knowledge transfer across varying institutional contexts.

Whilst the research indicates a positive relationship to presence of foreign firms and knowledge transfer, it demonstrates a negative relationship to openness to foreign firms

and knowledge transfer. *Openness to foreign firms* is a regulatory institution. This is a perplexing outcome as the regulatory institution is required at a specific level of development in order to facilitate the cognitive institution, that is, *presence of foreign firms*. This may require further investigation as nature of regulatory contracts may impact the knowledge transfer process – either through the medium of knowledge transfer, the volume or by intent associated with the knowledge transfer (Perez-Nordtvedt et al, 2008). Since this was measured using foreign direct investment as a percentage of GDP, it may represent foreign direct investment within the country's security exchange rather than physical relocation of a foreign company within another country's boundaries. Alternatively, what matters is whether the middle managers have familiarity with foreign firms and their modus operandi. It can be hence argued that government attracting FDI does not enable knowledge sharing, in fact, it may be interpreted as a sense that government is trying to address this very gap.

The results of the study of presence of foreign firms on ease of knowledge transfer indicated significance for the cognitive and regulatory institution. However did not demonstrate any significance for a relationship with the normative institution. Hence the results do not compliment studies performed by Rus and Iglic (2005) indicating that relationships based on trust and involving significant interactions results in a common language to enable knowledge transfer. Respondents required multiple interactions to comprehend the knowledge, however, the research did not demonstrate findings

supportive of the notion that actors in varying institutional contexts demonstrate varying levels of trust to foreigners which impacts ease of knowledge transfer.

From a managerial perspective, an important take away is that knowledge transfer practitioners can expect a greater ease of knowledge transfer in developed countries where physical presence of foreign firms is high and therefore cognitive institutions around foreign firms and foreign investments have been established. Within these developed countries, we can expect physical relocation of foreign firms which increases the ability to access local actors and build relationships between foreign and local actors thus moulding cognitive institutions to enable ease of knowledge transfer.

Based on the projects intent and goals, the research offers an alternative approach for knowledge transfer practitioners. Approaching LDCs first may be of strategic importance nothing the length of time required to learn. Following proof of concept, the project can be deployed to developed and developing countries and knowledge transfer efforts ramped up for a smooth transition.

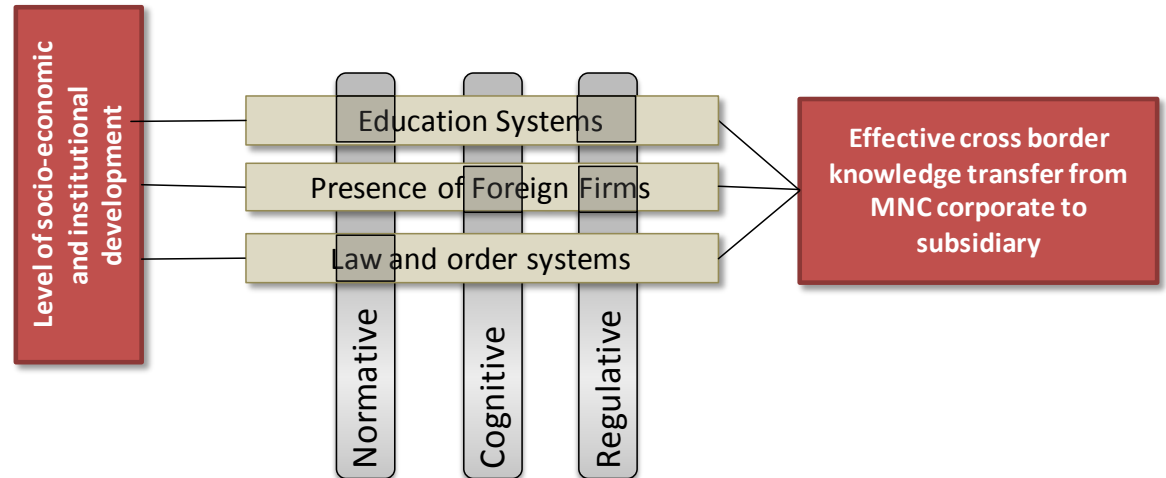
Lastly, the research provides insights for knowledge transfer based on the development of authority institutions. Literature indicates that authority institutions can constrain or enable behaviours (Toerell, 2007; Arthur & Kim, 2005; Tseng & Kuo, 2009). From a normative perspective, the research indicates that the relationship can materialize. As the

perception of corruption increases, ease of knowledge transfer decreases. Thus, confirming that least developed countries with respondents illustrating a high perception of corruption will have a tendency to demonstrate a greater expectation of a self benefit (Arthur & Kim, 2005) which impacts the ease of knowledge transfer if this benefit does not transpire prior to initiating the knowledge transfer process.

The research did not indicate any further relationships either on a cognitive or regulatory basis for authority systems and thus normative institutions and perceptions or mental models are a key facilitator of knowledge transfer. This lack of significance between level of corruption and knowledge transfer and between authority systems and ease of knowledge transfer implies that middle managers may not be familiar with governmental and regulatory institutions. It is possible that the authority systems within the company are more pronounced thus the company ethos overrules the national ethos regarding corruption. Strong internal governance mechanisms and long tenure with the company would negate any external influences of corruption and poor or strong authority systems.

The important managerial implications is that the full benefits of the project must be communicated and demonstrated to actors in least developed countries, and to a lesser extent to actors developing countries in prior to project commencement. These benefits may include career progression, performance appraisal and benefits – and the impression of a trade or exchange is visible.

Figure 6.2 Model of cross border knowledge transfer areas of impact



The research has established a relationship between institutional sectors and knowledge transfer. It has confirmed that whilst three institutional pillars exist, all three do not impact knowledge transfer (figure 6.2) for the institutional sectors of education systems, foreign firm presence and authority systems. The findings suggest that development of education as an institutional sector is an important determinant of ease of knowledge transfer but this impact is particularly in the normative and regulative environments. It is the cognitive institutions that impact ease of knowledge transfer within the institutional sector of foreign firm embeddedness and only normative institutions impact ease of knowledge transfer where law and order and authority systems are concerned.

The overall outcome of the study is that as the socio-economic development increases, the ease of knowledge transfer increases. A basic, yet interesting demonstration of this (outside the modeled findings) was the frequency of the communications between the corporate and subsidiary support team which increased as the level of development decreased. That is, teams based in least developed countries required more clarification to improve their understanding of the knowledge.

Understanding why the remaining variables bear no significance allows for interesting observations (as outlined above) and leads to avenues for future research.

Chapter 7: Conclusion

7.1 Study implications and contributions

This study and its findings have important implications for both research and practice. Based on the presumption that the level of development of institutions and external environmental conditions has an influence on actors ease of knowledge transfer, this research proposes that three institutional sectors are central to effective cross border knowledge transfer.

The first is if a recipient places importance on learning as well as originates from a country that has a strong educational system, it will lead to a faster comprehension of the knowledge and greater ease of knowledge transfer.

Secondly, the research highlights that the greater the exposure the recipient has to foreign ways of working, the more they are able to understand new ways of working and hence the greater the ease of knowledge transfer.

Lastly, the research creates a relationship between authority systems and ease of knowledge transfer. It highlights that if a recipient has a high perception of corruption due to the nature of the normative institutions in the country of origin, their ease of knowledge transfer decreases without a clear indication of potential gains from the knowledge transferred. Unlike extant research that addresses knowledge transfer by exploring characteristics of the sender or the receiver, characteristics of the knowledge itself or the characteristics of the communication medium, this research proposes that the external institutional environment impacts the effectiveness of knowledge transfer. Given the difference in institutional contexts of developed, developing and LDCs, this research indicates that multinationals with subsidiaries in very different institutional and socio-economic environments experience a varied ease of knowledge transfer.

Therefore this study contributes to knowledge literature by identifying a new dimension of knowledge transfer for multinationals with subsidiaries in developed, developing and least developed countries. As such, the study makes an important contribution to the literature on cross border knowledge transfer. The research indicates that the more developed the recipients normative institutions around importance of learning, the more developed the education and schooling institutions of a country, and the greater the exposure to foreign knowledge the greater the ease of knowledge transfer. Unlike extant research on knowledge flows, this research explores the impact of the development of authority and law and order systems from a normative, cognitive and regulatory

institutional perspective. It takes these institutions and maps the relationship to knowledge transfer with an outcome that contributes to literature on cross border knowledge flows. This study establishes a relationship between the perception of corruption as a normative institution, and effectiveness of knowledge transfer. It therefore provides academics, knowledge transfer practitioners and business with a new perspective on optimizing knowledge transfer initiatives. It confirms the importance of qualifying and quantifying the usefulness of the knowledge and benefits that can be extracted from participating in the knowledge transfer initiative.

The research provides business of a view that quick win knowledge transfer initiatives should commence in developed countries from which “disciples” of the knowledge can be created to transfer the knowledge to recipients in less developed countries. Thus allowing internal resources to be responsible for transferring the knowledge and reducing head office overhead costs associated with knowledge transfer. Appleyard (1996: 137) has suggested that if we understand the “mechanisms and determinants of how knowledge flows, company managers ... can influence knowledge diffusion more effectively”

7.2 Limitations and directions for future research

While the study provided interesting insights into institutional contexts and cross border knowledge transfer, the results should be interpreted with a level of caution within the context of the limitations. Due to the existing relationship between the researcher and the recipients, it can be expected that the research includes a response bias. Respondents may have answered questions in a way they believed the researcher would want them to answer the question as opposed to based on their own true beliefs.

Secondly, generalization of findings is a possible issue. This research was limited to a single firm within a mineral production sector with subsidiaries in developed, developing and least developed countries. Therefore future studies should attempt to examine the relationship across a broader subset of industries.

Furthermore, the research relied on self reported measures. Whilst there are limitations associated with these measures, it is believed that this research employed an acceptable approach in deriving these measures and they are considered appropriate within the context of this research. Literature by Dyer & Hatch (2006) indicate that the key informant approach (as that adopted by this study to obtain number of email communications) may be a superior approach as compared to multiple informants as the selected person is

uniquely qualified to respond to the measures being investigated and where the items are related to external relationship items.

The respondents in this study were senior project managers with an average tenure within the organization of 11 years and in the knowledge transfer project for an average of 2 years. The project managers have been assessed on the project theory and principles and have implemented the project at 12 global sites with personal interaction with subsidiary teams at each site. Given the nature of the phenomenon under investigation, it was necessary to ensure validity and reliability of the measures within the inherent constraints of the approach (self-informed reporting). A suggestion for future research is to replicate the results using alternative approaches and measures to further validate the proposed theories.

Lastly, a survey based approach was used. However, it is very limited in capturing the richness of social complexity associated with the knowledge transfer process (Perez-Nordtvedt et al, 2008). Whilst every effort was used to identify and control certain individual and organization level variables that impact knowledge transfer (Mowery, Oxley & Silverman, 1996; Zahra, Ireland & Hitt, 2000; Pérez-Nordtvedt et al 2008; Lord & Ranft, 2000; Lyles & Salk, 1996; Tsang, 2002; Schultz, 2001), it is possible that some data that could contribute to the richness of the research may be lost. Therefore it is suggested that future research attempt to replicate these results using more observation type

approaches so that individual dimensions can be captured to obtain a deeper understanding of the institutional phenomenon associated with knowledge transfer.

Aside from the potential areas of research already identified, there are other areas of fruitful research. Future research should examine how institutional elements impact on the efficiency of knowledge transfer. This should incorporate measurement of comprehension of the knowledge. There are a number of institutional elements that impact normative and cognitive characteristics of individuals – such as labour systems and understanding whether the level of development of these systems impact ease of knowledge transfer and/ or efficiency of knowledge transfer. Building on these topics, also important, is the effect of institutional contexts between country of origin and country of destination on knowledge transfer, knowledge acquisition as well as knowledge retention. That is, cultural or normative institutional distance may enhance usefulness of knowledge transfer or desire for knowledge, however it may also have a bearing on cost of knowledge transfer with the impact of reduced ease and comprehension - leading to important business implications.

The lack of significance of key independent variables such as level of corruption, level of education, trust of foreigners provides researchers with an opportunity to conduct studies with alternative indices to represent these variables. Thus providing greater insight into the results.

7.3 Concluding thoughts

The study provides insights that the three selected institutional sectors are inherently linked with one another. Ease of knowledge transfer can be promoted by developing countries opening their borders to globalization and foreign investment as well as improving quality and access to education. Knowledge is able to spread more easily if foreign companies are able to introduce their foreign technologies (Perusad, 2001). This knowledge is unable to hold with proper desire for learning and adequate rates of literacy. Governance and institutions that protect property rights, independent judiciary, and enforceable corruption laws that deter anti-authority behaviours and this can be further encouraged through local companies in developing and LDCs adopt prudent controls and procedures even if the external environment does not offer this.

In conclusion, this research makes a significant contribution to the growing body of research that examines cross border knowledge transfer from multinational head quarters to subsidiaries. However, this research provide new and interesting insights on relationships between knowledge transfer and the institutional contexts of developed, developing and least developed countries, it opens a door in identifying various other factors that influence the effectiveness and efficiency of knowledge transfer and related outcomes. It is thus hoped that this research stimulates further work within the context of institutional analysis.

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Appendix 1

Overview of the project

The following information has been summarised from internal company documents. The name of the company is not disclosed, following the agreement regarding data gathering.

Delivering on the company's objectives requires lean organisational practices. It is for that purpose that the company has initiated Project ONE which is focused on critical issues that constrain value creation and enhance and improve the core operations performance. Project ONE aims to establish a common and systematic approach to many activities). ONE is a company-wide global initiative that seeks to create a culture that promotes improvement and value, while creating a work environment that empowers individuals to make a difference. Project ONE establishes a common business framework across the company's vision, mission, values, strategy and management framework for operating, which is linked back to the company's business purpose.

The Business Process (BP) is a key component of the management framework. It is a sustainable, continuous method for improving the way the company operates: from setting expectations to analysing and improving (. Specifically, it articulates the processes by which the company approaches work, which is further supported by technical and operating systems. Fundamental to this is that the **right work** performed at the **right time** and in the **right way** will deliver the required performance (McAlear, 2005).

The BP implementation aims to ensure that each site achieve the same outcomes in terms of stabilised output and asset integrity by doing the right work at the right time and in the right way. Achieving these objectives entails a continuing series of decisions on the scope of work that is necessary to deliver plant performance, when the work needs to be done if performance is not to be compromised, and how all of the essential work can be completed within the constraints of the production and maintenance budgets that the business can afford (McAlear, 2005). According to the BP, all work must be approved prior to execution. BP requires a work flow to be followed prior to work execution in order to achieve the above-mentioned objectives.

Corporate team structures and responsibilities

For the BP to be successfully implemented at the subsidiary, a corporate team is required to oversee the overall integrity of the framework. A programme management office sets a project kick-off and go-live date within which the BP roll out must take place. Each subsidiary selects a team to endure a detailed technical training session of the theory of the BP, taught by a corporate team representative.

The core responsibility of the corporate team is to kick off the project by identifying gaps between the current way of working and the BP way of working and then oversee efforts with a subsidiary-located support team in closing these gaps prior to go-live. The corporate team identifies a series of actions that are required to close these gaps, which includes providing continuous training, coaching and guidance to the support team and assist the support team in achieving their milestone.

The corporate team that is based at THE COMPANY corporate office in Johannesburg, South Africa. The corporate team is comprised of the company employees that have been seconded from the business and have the following responsibilities:

- a finance project manager to ensure that the policies and procedures that enable BP are amended and remain SOX (Sarbanes Oxley) complaint and continue to support the company's financial reporting requirements in line with work approval

- Two procurement project managers who ensure that the resourcing requirements are met
- An operations project manager looks after planning for geology, engineering, metallurgy and mining operations. The operations manager oversees the delivery of job templates and also ensures integrity in developing these job templates. This requires coaching and knowledge transfer to the support teams.
- Two programme management office representatives ensure compliance to project management principles
- Two information system project managers who oversee the global roll out of a standardised work management interface that liaises with the local information systems to enable work approval, planning, scheduling, resourcing and work execution
- Consultants who provide the training to the support team and are core advisory to the support team

Support team structures and responsibilities

Each subsidiary sets up a support team ranging between 7 – 15 members from the host country who have been seconded from the business. They include representatives from multiple disciplines (engineering, mining, geology, metallurgy). The support team is

responsible for conveying the knowledge from the corporate team to all employees in the business. This is achieved through classroom-based training sessions to communicate the BP technical theory. The support team is also responsible for implementing the actions outlined in the corporate team's gap analysis to ensure a solid BP implementation on site. Each BP implementation is between 4 – 8 months, depending on the complexity and size of the subsidiary.

Therefore, core to the BP work management implementation is communication and knowledge transfer from a corporate team based at the MNC headquarters with knowledge developed at the MNC headquarters to subsidiaries based in developed, developing and LDCs.

The expectation is that a single standard outcome is achieved. The existing project schedule does not take into consideration challenges that can be experienced due to institutional constraints on the subsidiary actors where depending on the strength of the institutional influence, a significantly higher amount of communication may be required to transfer knowledge or a significantly longer time may be required by the corporate team on the site to develop relationships to overcome trust barriers in order to be successful in changing attitudes to knowledge transfer.

Appendix 2 - Survey

Table 9.1 Research survey and question source

Questions	Source
Control Variables	
Business unit at which you are currently deployed	
Number of years with the company	
Country in which you were born	
Number of years spent living in country of birth	
Number of years spent working in country of birth	
Country in which you are currently working	
Number of years spent working in this country	
Country in which you completed your tertiary education	
What is your highest level of education	
Number of project technical trainings you have attended	
Name of person responsible for educating you on project theory	
Please indicate the number of people you have trained in project theory and have passed evaluations at the first attempt	

Number of months spent at a subsidiary in another country as part of the project implementation	
Number of times you have been consulted on regarding project project theory	
How many members of the corporate team did you know before Project One started on your site?	
Are you working as an expat in the existing business unit?	
How many times in the year do you travel to countries with a different socio-economic background than your current location?	
How do you feel about learning and learning-related goals?	
I am willing to select a challenging work assignment that I can learn a lot from	Questionnaire on learning orientation based on instrument by VandeWalle's (2001)
For me, development of my work ability is important enough to take risks	
I often look for opportunities to develop new skills and knowledge	
I enjoy challenging and difficult tasks at work where I'll learn new skills	
How do you feel about the trustworthiness of people?	
One should be very cautious with strangers (in general)	Questionnaire on trust based on instrument by Mayer & Davis (1999); McAllister
Most experts tell the truth about the limits of their knowledge	
Most people can be counted on to do what they say they will do	

These days, you must be alert or someone is likely to take advantage of you	(1995)
Most adults are competent at their jobs	
Work colleagues from a foreign country approach their job with professionalism and dedication	
Based on his understanding of project content (the person who educated you on project), I see no reason to doubt his/her competence	
I can rely on members of the corporate team, not to make my job more difficult by careless work	
Other work associates of mine within my team, who must interact with members of the corporate team consider them to be trustworthy	
If people knew more about members of the corporate team, and their background, they would be more concerned and monitor their performance more closely	
How do you feel about law and order?	
Corruption is a major problem in the country I live in (this country)	Questionnaire on attitudes to corruptions based on instrument by Gbadamosi & Bello (2009)
Corruption is culturally acceptable in this country	
Bribery and corruption is not common among very religious people	
Bribery and corruption is more common among foreigners who live in this country	



The level of corruption in this country is exaggerated by the international community	
Bribes are expected in daily life in this country	
Changes in cultural values has increased corruption in this country	
Politicians in this country are generally more corrupt than ordinary citizens	
Citizens of this country are generally not corrupt individual	
Based on ou country of origin, corruption is a major problem in this country	