

Foreign direct investment and SME growth: Highlighting the need for absorptive capacity to support linkages between transnational corporations and SMEs in developing countries

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To cite this article:

Peter Lugemwa. Foreign Direct Investment and SME Growth: Highlighting the Need for Absorptive Capacity to Support Linkages between Transnational Corporations and SMEs in Developing Countries. *International Journal of Economics, Finance and Management Sciences*. Vol. 2, No. 4, 2014, pp. 245-256. doi: 10.11648/j.ijefm.20140204.13

Abstract: FDI has always been thought to affect the growth of local firms through technological spillovers and as such many developing countries have invested a lot to attract FDI. These spillovers can happen through FDI having backward, forward and horizontal linkages with local firms. Though in many countries FDI has contributed to the development of local firms, there is evidence to suggest that this is not always the case. There are instances where FDI has instead driven local firms out of business. The ability of local firms and more particularly SMEs to benefit from technological spillovers from TNCs is affected absorptive capacity. SMEs need absorptive capacity to in order to able to learn from TNCs. Absorptive capacity is usually proxied by the technology gap between the foreign and the domestic firms and in the case of large technology gap SMEs may not learn from TNCs. To support the linkages and spillovers between SMEs and TNCs the absorptive capacity of SMEs in developing countries can be nurtured through various Workforce Development programs and programs that would affect the human resource practices and organizational routines of SMEs.

Keywords: Foreign Direct Investment, SME Growth, Absorptive Capacity

1. Introduction

It has been largely thought that Foreign Direct Investment leads to a host country's development through the enhancement of the productivity of local firms and industries. As such many developing countries have invested a lot to attract FDI. Policy makers in developing countries are competing fiercely for FDI. They hope that FDI will provide a major impetus for economic development (Paus and Gallagher, 2006). Lall & Narula (2004) maintain that most developing country governments have removed restrictions on FDI inflows. International donors and development agencies focus more on promoting private rather than public capital flows as catalysts of long-term development. The international 'rules of the game' reinforce these trends, setting up a legal framework for minimizing policy interventions in FDI. Liu and Lin, (2004) hold that there exists a long tradition in development economics that takes an optimistic view of the effect that FDI has on

industrial development of the host country. In this tradition, multinationals are seen as agents that increase competition in the host economy, transfer modern technology, and help achieve a more efficient allocation of resources.

However, there is evidence that the flow of FDI doesn't necessarily lead to the development of local firms. Calagni (2003) maintains that empirical evidence from the developed and developing world demonstrates that the positive spillover effects from FDI do not necessarily occur in practice. Smallbone (2007) argues that whilst there are 'a priori' arguments to support the potential role of FDI-SME linkages between enterprises as a development strategy in transition and developing countries, and some positive case examples, empirical evidence suggests that the potential benefits do not always materialize. He further says that financial incentives to FDI, whether in the form of grants or tax concessions, can represent a considerable burden to developing countries and are unlikely to represent a sustainable strategy for longer-term development

(Smallbone, 2007). Paus and Gallagher (2006), hold that there is a widespread belief in a quasi-automatic FDI-development sequence which is based on an erroneous understanding of real market conditions at the national and the global level. Contrary to the neoclassical model-theoretic assumption that markets are perfect and complete, markets in developing countries are often riddled with imperfections. Hence the flow of FDI will not automatically result into spillover benefits to local firms. Several authorities have identified the lack of absorptive capacity as the major obstacle to the technology transfer between TNCs and local firms ((Narula and Portelli, 2004; Sayek and Koymen, 2009; Glass and Saggi, 1998; Kokko, 1994; Kokko et al., 1996; Paus and Gallagher, 2006; Smallborn 2007; Lall & Narula, 2004).

This article bases on literature review to analyze the linkages between TNCs and local firms; the antecedents of absorptive capacity; the effect of absorptive capacity on FDI-SME linkages; and to suggest ways in which the absorptive capacity of SMEs in developing countries can be developed through workforce development programs and programs that will promote good human resource practices and organizational routines.

2. FDI and the Development of Local Firms

FDI is widely thought to bring with it, into the host country, a bundle of productive assets, including long-term foreign capital, entrepreneurship, technology, skills, innovative capacity, and managerial, organizational and export marketing know-how (Ikiara 2003). the role of the TNC as a source of capital and technology has grown over time, as other sources of capital have become scarcer or more volatile and technical change has accelerated. TNCs continue to dominate the creation of technology; indeed, with the rising costs and risks of innovation their importance has risen (with the exception of very new technology areas) (Lall & Narula 2004).

Neoclassical theorists such as Romer, (1986) and Lucas, (1988), argue that FDI spurs long-run growth through such variables as research and development (R&D) and human capital. They suggest that, MNCs can speed up the development of new intermediate product varieties, raise product quality, facilitate international collaboration on R&D, and introduce new forms of human capital (Ikiara, 2003). The greatest contribution of FDI to economic growth occurs through technology transfer (Ikiara, 2003). It includes managerial skill, know-how, production techniques, machinery, information, and other intangible forms of capital.

The role of FDI in developing countries can be critical. Developing countries, lack the capacity to undertake research and development activities and to generate technological innovations; therefore they rely on foreign source of technological innovations in their growth process

(Mucchielli & Jabbour, 2004).

FDI in developing countries can potentially contribute to the upgrading of local suppliers through technical assistance, training and the transfer of knowledge. It may also contribute to increasing the rate of adoption of new technologies by local industries, as a result of processes of imitation and competition. In terms of employment, inward investors can generate new jobs directly, but they can also contribute to raising skill levels, because their skill requirements may be higher than those required by domestic firms (Smallborne, 2007).

3. The Linkages and Spillovers between TNCs and Local Firms

3.1. Backward Linkages

FDI spillovers may result from TNCs having backward linkages with local firms. Sayek and Koymen (2009) define the backward linkage as the relation between domestic and foreign firms when the domestic firm operates as the input supplier of the sector that multinational operates in. Dunning (1992) maintains that backward linkages with suppliers are the extent to which components, materials and services are sourced from within the host economy. Such linkages can range from arms length market transactions to deep, long-term inter-firm relationships. The evidence of positive spillovers is strongest and most consistent in the case of backward linkages, with local suppliers in developing countries (Smallbone 2007).

TNCs can benefit the host economy through relations with local suppliers of intermediate inputs in their production process. As a result, MNE affiliates may transfer technologies to local firms in their value chain; i.e. either to those firms who supply them with intermediate goods or to local buyers in the host country (Narula and Portelli 2004). The most important vertical spillovers happen through the supply chain linkage. Potential indigenous input suppliers for TNCs become actual input suppliers, as they learn to meet international quality standards, and on-time delivery and technological efficiencies that allow for competitive pricing (Paus and Gallagher, 2006). Backward linkages from FDI are beneficial to local suppliers in forms of increased output and employment, improved production efficiency, technological, managerial capabilities and market diversification (Liu and Lin, 2004).

Backward linkages create technology spillovers through several mechanisms (Hoi Le and Pomfret 2008). First, TNCs may transfer technology directly to their local suppliers by training or technical assistance in order to increase the quality of supplier products. Because multinationals demand higher-quality inputs, they will try to improve the efficiency of their intermediate input suppliers by direct knowledge transfer (Sayek and Koymen, 2009). They may help indigenous producers to upgrade their technological capabilities, directly through assistance

with technology acquisition and sharing of relevant production knowledge (Paus and Gallagher, 2006)

Secondly, higher requirements for product quality and on-time delivery set by TNCs may provide incentives to local suppliers to improve their production process or technology. As multinationals demand higher-quality inputs to be able to sell their products to foreign affiliates, local suppliers will have an incentive to improve their production techniques. Entrance of multinationals into the final goods sector may create benefits of scale for domestic suppliers (Sayek and Koymen, 2009). Paus and Gallagher, (2006) maintain that TNC affiliates may help indigenous producers to upgrade their technological capabilities, indirectly through the expectation of high quality standards and feedback on technical specifications of suppliers' output. In the best-case scenario, the newly acquired competitiveness will form the basis for supplier-oriented upgrading.

3.2. Forward Linkages and Spillovers

Spillover benefits may be realized through forward linkages when a multinational operates at the upstream sector of the domestic firm; in other words, the multinational operates as the input supplier of the domestic firm (Sayek and Koymen, 2009). Dunning (1992) holds that Forward Linkages with customers include marketing outlets, which may be outsourced. Examples include petrol stations and restaurant chains; and linkages with industrial buyers, through, for example, value-added after-sales services. Domestic firms who gain access to higher-quality intermediate inputs and to the complementary services provided for these inputs may present higher levels of productivity (Javorcik, 2004 quoted by Sayek and Koymen, 2009).

Forward Linkages may induce technology spillovers through various channels. First, domestic firms may benefit from supplies of intermediate goods and machinery from MNEs that provide better quality products and lower costs. Secondly, as marketing outlets for TNCs, domestic firms may receive support in the form of training in sales techniques and supply of sales equipment, therefore generating more technology externalities. Thirdly, FDI in infrastructure and business services directly improves the productivity of its customers if these services are introduced or improved (Hoi Le and Pomfret, 2008).

3.3. Horizontal Linkages

Horizontal spillovers take place when domestic firms benefit from foreign affiliates which are operating within the domestic firm's sector (Sayek and Koymen 2009). Horizontal spillovers refer to the technology leakage from multinationals to local firms in the same industry (Liu and Lin, 2004). There are three types of spillover effects, which can potentially work at the horizontal level: the human capital effect, the demonstration effect and the competition effect. The human capital effect occurs when TNCs train workers and provide them with new knowledge and skills,

which workers take with them if they work for an indigenous company or establish their own business. Labour turnover may disseminate technology from MNEs to other firms as workers trained or employed by MNEs move to domestic firms or start their own businesses. Workers employed by a MNE affiliate are most likely to receive and acquire knowledge of superior technology and management practices. Through the switching of employers or even the start up of new business enterprises by of MNE trained personnel, the knowledge embodied in human capital can spill over to other host country-based firms ((Paus and Gallagher, 2006; Narula and Portelli , 2004; Hoi Le and Pomfret, 2008).

The demonstration effect occurs when local firms learn from foreign ones simply by observing and imitating product innovations or novel forms of organization adapted to local conditions (Hoi Le and Pomfret, 2008). The horizontal spillovers may be realized through imitating the foreign technologies, techniques and managerial skills (Sayek and Koymen 2009).

The competition effect occurs as a result of competition generated by the presence of TNCs. Existence of a foreign affiliate in the sector may create a competition effect and domestic firms may try to catch up with multinationals through research and development activities and reallocation of resources (Sayek and Koymen 2009; Blomstrom and Kokko, 1998). If TNCs have advantages over domestic firms in technology, then greater competitive pressure may induce domestic firms to introduce new products or new technology to defend their market share, and to adopt new management method to increase productivity (Hoi Le and Pomfret, 2008).

4. Upgrading as a Way of Enhancing Linkages between FDI and SMEs

Firm-level upgrading can facilitate the participation of local firms in wider markets. By upgrading processes and products, producers can enhance value chain productivity and competitiveness, increasing the benefits to local firms which are commonly SMEs. Upgrading entails not only improvements in products, but also investments in people, know-how, processes, equipment and favorable work conditions (Fromm, 2007). Upgrading refers to "a process of improving the ability of a firm or an economy to move to a more profitable and/or technologically sophisticated and skill-intensive economic niche" (Gereffi, 1999). Depending on the level of analysis, upgrading can be examined from the country, firm, and potentially individual level. Humphrey and Schmitz (2002) identify four types of industrial upgrading: product (producing higher-value products); process (incorporating more sophisticated technologies into production); functional (moving to higher-value functions); and intersectoral (leveraging expertise gained in one industrial sector to enter a new sector.)

4.1. Process Upgrading

This refers to the ability of the firm to perform the same operation more efficiently. The reorganization of production processes, or the introduction of new technologies, results in higher efficiency, constituting a competitive advantage. Process upgrading involves improving value chain efficiency by increasing output volumes or reducing costs for a unit of output. Firms can upgrade processes by transforming inputs into outputs more efficiently through superior technology or reorganizing the production systems. For example, the production reorientations involved in the move from craft production to mass production, and then from mass to lean (or just-in-time) production would be a form of process upgrading (Gereffi 2011; Humphrey and Schmitz, 2004; Van Wijk and Kwakkenbos 2012; Kaplinsky and Readman 2001).

4.2. Product Upgrading

This entails producing higher quality goods within the chain, or introducing novel products faster than rivals. New products are launched, or old products are improved more quickly than by competitors. Thus, firms can move up to higher - quality product lines. Product upgrading includes the ability to produce components or retail new or more competitive products developed by lead firms. Distributional and after-sales services are among the activities most frequently transferred within GVCs. Outsourcing these activities implies considerable advantages for downstream partners, mainly because they can rapidly cover extensive markets while minimizing risks and investment in distribution channels. The local distributor thus benefits from the use of an established brand name, a proven business concept and the transfer of knowledge from the brand owner. Product upgrading has become increasingly important as the richer economies have become more quality conscious and as standards have risen. Some standards are driven by lead buyers (i.e. supermarkets requiring traceability of food products), others by statutory hygiene standards in importing countries and others, increasingly, in response to fair trade and organic demands by final consumers. The challenge of standards lies in achieving them (to allow market access) without excluding the poor from the value chain. Process and product upgrading are closely related because improving product quality often involves improvements to the production process (Gereffi 2011; Humphrey and Schmitz, 2004; Van Wijk and Kwakkenbos 2012; Kaplinsky and Readman 2001).

4.3. Functional Upgrading

This occurs when the firm assumes functions of the chain with greater value added. For instance, when a firm previously dedicated to assembly operations in the chain eventually takes on design, marketing, or R&D activities. Overall improvement of a firm's abilities and skills through its assumption of a new field of responsibility and, possibly,

the termination of activities in previous fields. Functional upgrading seeks to increase the value added by changing the mix of activities conducted within the firm (e.g. taking responsibility for outsourcing accounting, logistics and quality functions) or moving the locus of activities to different links in the value chain (e.g. from manufacturing to design). Functional upgrading refers to changing the mix of functions performed by actors in the value chain – increasing (upgrading) or reducing (downgrading) the number of activities performed by individuals and firms. For instance, an agricultural producer starting to process some of their output to add value to it represents functional upgrading (Gereffi 2011; Humphrey and Schmitz, 2004; Van Wijk and Kwakkenbos 2012; Kaplinsky and Readman 2001).

4.4. Inter-Sectoral or Chain Upgrading

This involves the assumption of new production activities, with firms moving from one value chain to another. This can occur due to the utilization of specific competencies which are transferable from one sector to another. Inter-chain upgrading is the use of skills and experience developed in one value chain to productively engage with another – usually more profitable – value chain. Examples of this include the shift from growing traditional commodities to high-quality export. This occurs when firms apply the competence acquired in a particular function of a chain (e.g., competence in producing particular inputs, or in export marketing) to a new sector. For example, a company or a cluster of companies that specialize in graphite materials could move from making golf clubs and tennis rackets to racing bikes, fishing rods, and even airplane components (Wijk And Kwakkenbosi, 2012; Van Dijk and Trienekens, 2012; Gereffi 2011; Humphrey and Schmitz, 2004; Van Wijk and Kwakkenbos 2012; Kaplinsky and Readman 2001).

5. The Concept of Absorptive Capacity

Absorptive capacity at firm level is essentially a firm's ability to deal with external knowledge. In 1989 Cohen and Levinthal defined the absorptive capacity of a firm as its ability to recognize the value of new, external information, assimilate it and apply it for commercial ends. The seminal works of Cohen and Levinthal (1990) offered the highly influential definition of absorptive capacity, as a firm's ability to: 'identify, assimilate and exploit knowledge from the environment'. Cohen and Levinthal again modified their definition of absorptive capacity in 1994, adding that this capacity not only enables the firm to exploit new external knowledge, but also allows it to predict the nature of future technological advances more accurately. Mowery and Oxley (1995) define absorptive capacity as a broad set of skills needed to deal with the tacit component of transferred knowledge and the need to modify this imported knowledge. Zahra and George (2002) expanded the concept by introducing an additional component – which is: 'a firm's

capability to develop and refine the routines that facilitate combining existing knowledge and the newly acquired and assimilated knowledge'. The three dimensional model of Cohen and Levinthal was thus reformulated to include a fourth dimension: transformation capability.

Zahra and George (2002) suggest that absorptive capacity can be either potential or realized. Potential absorptive capacity consists of acquisition and assimilation capabilities, and realized absorptive capacity consists of transformation and exploitation capabilities. They also suggest that both components of absorptive capacity "fulfill a necessary but insufficient condition to improve firm performance". This means that firms are not able to exploit knowledge unless they firstly acquire and assimilate it. On the contrary, acquisition and assimilation of knowledge does not yet guarantee improvement in performance, whereas realized absorptive capacity has been proposed as a primary source of performance improvement (Zahra and George 2002). Realized absorptive capacity reflects the firm's capacity to leverage the knowledge that has been absorbed (Thornton, 2008).

Zahra and George (2002) maintain that there are four dimensions of Absorptive Capacity namely: External Knowledge Acquisition, Knowledge Assimilation, Knowledge Transformation and Knowledge Exploitation.

5.1. External Knowledge Acquisition

Acquisition is defined as the ability to recognise value and acquire the external knowledge that is critical to a firm's operation (Lane and Lubatkin, 1998; Zahra and George 2002). The external knowledge sources reflect the degree to which the firm is exposed to new knowledge. It is suggested by Zahra and George that the diversity of the knowledge exposure and the degree of complementarity between the firm's existing knowledge and knowledge from the external source, both have a positive effect on the development of the absorptive capacity (Zahra & George, 2002). The process of knowledge acquisition involves the identification market signals and information on those signals is gathered and transmitted to the filter. The more the information that can be collected over of a given period, the better the information search works. Information is critical both for the formulation of the strategy and for the daily operation of a company (Welsch et al 1997). Glazer (1991) defines information as data that have been given structure (i.e., placed in a context).

Cohen and Levinthal (1990) argue that the ability to tap into external technology sources may be created as a byproduct of a its prior R&D investment, or firms can invest directly in absorptive capacity when for instance personnel participates in advanced technical training.

5.2. Knowledge Assimilation

Assimilation refers to the firm's capacity to absorb external knowledge. Zahra and George (2002) define assimilation as "firm's routines and processes that allow it to

analyze, process, interpret, and understand the information obtained from external sources". Interpretation and understanding are however always human activities that can be improved for example by increasing the number of informal meetings and communication between the personnel involved in the management. Assimilation of the new knowledge is important because without it, the knowledge cannot be disseminated to other parts in the organization and existing knowledge bases cannot be renewed. Thus, assimilation capabilities are required to make sense of the externally acquired customer-related knowledge and to integrate this knowledge so that consistent value-adding strategies can be developed for the customer (Campbell 2003)

Internal and external sources of knowledge are complements. On the one hand, companies require internal R&D capabilities to recognize and monitor interesting technologies that are developed elsewhere. On the other hand, internal research capabilities are indispensable to effectively exploit external know-how (Cohen and Levinthal, 1989). Absorptive capacity is moderated by two factors: on the one hand organizational routines and processes that make internal skills and resources work together (Grant 1996; Vanhaverbeke et al 2007) and on the other hand power relationships both inside the firm and those with customers and others external stakeholders (Pfeffer, 1981). As a result, absorptive capacity can only be fully understood when we also analyze the internal structures and processes of a company.

Intra-firm Knowledge Dissemination is necessary for knowledge assimilation to occur. Once information is gathered and brought into the firm the next major responsibility within the firm is to separate relevant market signals and transmit and disseminate them to all interested parts of the organization. Without information transfer and dissemination no response could be designed and implemented (Welsch et al 1997). Sinkula (1994) pointed out ways to disseminate information: interdepartmental meetings and their frequency, interdepartmental cooperation, contacts with customers and their frequency, etc.

Knowledge generated by individual organizations does not come to bear on an organization independently (Crossan et al 1999). Knowledge is socially constructed and organizational learning involves a complex social process in which different units interact with each other (Dal Zotto 2003).

5.3. Knowledge Transformation

Transformation dimension of absorptive capacity refers to the capabilities that facilitate the renewing of existing knowledge bases based on the new acquired and assimilated knowledge. It is the firm's ability to develop and refine routines that facilitate the transfer and combination of existing knowledge with newly acquired and assimilated knowledge (Zahra and George 2002). Thus, as a result of transformation, firms may be able to see important matters in a different light, and they may have to change their

dominant perceptions. As Zahra and George (2002) put it: "it yields new insights, facilitates the recognition of opportunities, and, at the same time, alters the way the firm sees itself and its competitive landscape". The main objective of this ability is to find out how to adapt or reconfigure the new knowledge to the reality and specific needs of the organization.

5.4. Knowledge Exploitation

Exploitation refers to a firm's ability to apply new external knowledge commercially to achieve organisational objectives (Lane and Lubatkin, 1998). It can also refer to the routines that allow firms to refine, extend and leverage existing competences or create new ones by incorporating acquired and transformed knowledge into its operations (Zahra and George 2002). Exploitation is perhaps the most important dimension of absorptive capacity as it describes the capability of the firm to exploit the customer-related knowledge in the customer value creation for example in terms of new products and services. This is also the dimension that allows the firm to leverage the existing competencies or to develop new competencies. As such, it is also the most challenging stage as many firms have been found to be better at acquiring knowledge than actually utilizing it (Campbell 2003).

The knowledge chain consists of awareness and responsiveness, that is; companies must have knowledge, but they also must have the capacity and willingness to act on it. Knowledge management theories sometimes ignore the latter, becoming preoccupied only with a company's intellectual prowess (Davenport and Prusak, 1998). The viability of a firm's knowledge chain determines its ability to overcome the forces of inertia to react swiftly and decisively to environmental changes. A strong and unbroken knowledge chain can consistently lead to essential incremental improvements and more significant breakthroughs that lay the foundation for new markets and future growth. The knowledge chain represents a company's cognitive power for action: its capacity for recognizing, anticipating, and acting on market shifts and movements or new technological developments in a way that is superior to its competitors (Welsch et al 1997).

6. Absorptive Capacity and FDI Spillovers

The development of Absorptive Capacity is a prerequisite for local firms to benefit from FDI. Narula and Portelli (2004), hold that the empirical evidence seems to suggest that a number of determinant factors need to be in place at the host country level for indigenous firms to benefit from MNC spillovers. There is consensus in the literature highlighting these determinant factors, grouped under the concept of absorptive capacity. Absorptive capacity refers to the ability of an organization or region to identify, assimilate and exploit knowledge from the environment (Fu 2007,

Cohen and Levinthal, 1989).

Lall and Narula (2004), hold that absorptive capacity is significant for development because it allows domestic actors to capture knowledge that exists elsewhere. Where absorptive capacity is lacking in domestic firms, they may, instead of reaping technological benefits from FDI, be 'crowded out'. They quote Borensztein et al (1998) who show that, at country level, a minimum threshold of absorptive capacity is necessary for FDI to contribute to higher productivity growth. Kokko et al. (2001) highlight the importance of past experience in industrialization as a precondition for international transfer of technology and the absence of this experience is concomitant to lack of absorptive capacity by the local sector

Absorptive capacity is usually proxied by the technology gap between the foreign and the domestic firms, R&D intensities of the local firms, or human capital embodied in local firms (Fu, 2007). Studies which consider technology gap between domestic and foreign firms as an absorptive capacity, propose that in the case of large technology gaps an increase in foreign presence may hurt domestic firms through the competition effect (Sayek and Koymen 2009). Glass and Saggi (1998) hold that the larger the gap, the less likely are host country firms to have the human capital and technological know-how to benefit from the technology transferred by the multinationals and, hence, the lower is the potential for spillover benefits. Kokko (1994) quoted by Girma and Gorg (2005), advances the idea that spillovers depend on the complexity of the technology transferred by multinationals, and the technology gap (that is, the difference in labour productivity) between domestic firms and MNCs. Kokko et al. (1996) hypothesize that domestic firms can only benefit if the technology gap between the multinational and the domestic firm is not too wide so that domestic firms can absorb the knowledge available from the multinational. Thus domestic firms using very backward production technology and low skilled workers may be unable to learn from multinationals.

Indigenous input producers may not be in a position to respond to latent demand from TNCs, because the technology gap may be too big for them to meet TNC demand in terms of cost, product quality, or on-time delivery. National firms will not become input suppliers for TNCs, if the technological gap between the average host country firm and the average TNC is too large (Paus and Gallagher, 2006).

To build the absorptive capacity of local firms, policy makers should work with inward investing enterprises, donor organizations and other appropriate intermediaries to develop capacity building programmes for local potential SME suppliers, in order to facilitate the development of backward linkages and other positive spillover effects. Such programmes will need to pay attention to quality management; training and management development programmes (Smallborn 2007).

Lall & Narula (2004) hold that the host country needs to develop policies that will help to build local capabilities in

order to benefit from FDI spillovers. FDI cannot drive industrial growth without local capabilities. They contend that the neo liberal approach favoured by the Washington consensus which leaves capability development to free market forces provides few realistic answers. It can result in slow and truncated technological development, with gaps between countries rising. Policy needs of capability building exist to provide 'space' for enterprises in the infant industry to master new technologies without incurring enormous and unpredictable losses, and to ensure that skill, capital, technology and infrastructure markets meet their needs. There is also a need to coordinate learning across enterprises and activities.

7. Building Absorptive Capacity for Local Firms

7.1. The Path Dependent Nature of Absorptive Capacity

Cohen and Levinthal (1990) argue that absorptive capacity is path-dependent because experience and prior knowledge facilitate the use of new knowledge. As a consequence, absorptive capacity is cumulative. The cumulative nature of knowledge is also related to employees' level of education. The higher the level of education and training an employee receives, the higher his or her individual ability to identify and exploit new knowledge will be. A firm's Absorptive Capacity is however not simply the sum total of the absorptive capacities of their individual employees. Cohen and Levinthal (1990) conclude that it depends on the ability of an organization as a whole to stimulate and organize the transfer of knowledge across departments, functions and individuals. Firms' absorptive capacities depend on those of their employees, the general level of education, experience and training their employees have and this has a positive influence on firms' level of absorptive capacity (Thornton, 2008).

Cohen and Levinthal's (1990) maintain that prior related knowledge is the most important antecedent to absorptive capacity. They view absorptive capacity as a firm-level construct, an ability the firm develops over time by accumulating a relevant base of knowledge. The authors argue that organizational units which possess relevant prior knowledge are likely to have a better understanding of new technology that can generate new ideas and develop new products.

As new knowledge builds on the existing knowledge structures, it would not be possible to identify relevant new knowledge without prior related knowledge (Nonaka & Takeuchi, 1995). If the prior knowledge base is limited, the firm may end up at distributing widely every little piece of new information thus easily leading to an information over-load (Sinkula 1994). Thus, in order to recognise and value new knowledge, a firm must possess some amount of prior knowledge basic to the new knowledge. The prior knowledge should be relevant enough to facilitate understanding (Cohen/Levinthal 1990) and therefore

learning processes. A firm's absorptive capacity depends upon (a) the specified type of new knowledge offered by the partner, (b) the similarity between the partner firms' organizational practices/structures and (c) one firm's familiarity with the other's set of organizational problems (Lane and Lubatkin 1998). An individual's learning is greater when the new knowledge to be assimilated is related to the individual's existing knowledge structure (Grant 1996).

7.2. The Role of Workforce Development Programs

Absorptive capacity at country level can be build through workforce development programs. Workforce development is the process by which a territory's initial endowment of human capital is converted via multiple channels—education, training and relevant services such as labor market intermediation, exchange and information—into a source of competitive advantage for firms and industries in the territory. In practice, workforce development refers to a dizzying array of education and training practices including, but not limited to: general basic education and secondary education, vocational education, higher education and lifelong learning, as well as pre-employment training, off- and on-the-job training, apprenticeship training, formal and informal training and entrepreneurship training (Creticos et al., 2009).

Given the fact that SMEs (especially in developing countries) are concentrated in low- medium value added activities where technical skills are critical, workforce development programs that would enhance SME absorptive capacity and thereby promote FDI-SME linkages need to take into account the technical skills needs of SMEs. It is however important to note that in most developing countries technical education is not properly developed – with an array of challenges including: lack of quality; difficulties in teaching the skills demanded by the labour market; and lack prestige of technical education as compared to university education.

Projecting future workforce requirements is also critical in this process. Adequately forecasting future job creation and the corresponding skills requirements is important in ensuring that the supply of labour meets the demands of the industry. Developing countries need to focus their scarce resources on developing the labour force they need for the future and this includes projecting the absorptive capacity needs for the future. Achieving this requires mapping the Global Value Chains in which they may potentially compete putting into comparison their current position with their desired upgrading trajectories (Fernandez-Stark et al. 2012). GVC analysis can provide guidance for developing countries regarding future workforce needs and their scarce resources can thus be focused more effectively to target future skills needs.

Collaboration and sharing of information among stakeholders is also critical in this process. There is need to accurately determine human capital stocks, existing institutional capacity and to efficiently disseminate

information from the industry to different actors in the education and training arena.

7.3. *Human Resource Practices*

Given that SMEs most times lack appropriate in-house R&D capacities, Human Resource Practices can be very instrumental in the development of their absorptive capacity. Cohen & Levinthal (1990) point that organizations need prior related knowledge in order to be able to assimilate and use new knowledge. Succinctly, in order to absorb new knowledge and utilize the benefits of FDI as much as possible, the host country needs to have the initial development of related knowledge and capacities. Sayek and Koymen (2009), maintain that the human capital level of domestic firms is important in the sense that it is a part of firm's technological capability. In other words, domestic firms that possess higher levels of human capital are more able to absorb technologies or managerial skills of foreign entrants. The effect of human capital on the direction of possible horizontal, backward and forward spillovers can be explained as follows. In the case of horizontal spillovers, skill level of domestic firms are important since imitation of foreign technology, operational and management skills require some level of human capital. Therefore, one can expect that domestic firms that possess higher levels of human are more capable of imitating foreign technology. Hence, firms with higher human capital may realize higher productivity spillovers from FDI through horizontal linkages.

Giuliani and Bell (2005) claim that at least when absorptive capacity is analyzed at the firm level, there is a convergence in the literature on the importance of human capital for the purpose of a firm's capability to access external sources of knowledge. Overall, in the literature, absorptive capacity is often described in terms of the knowledge base of the firm. This is usually identified in terms of human resources (skills, training, experience, etc.) Gupta and Singhal (1993) conceptualize HRM practices along four dimensions namely: (1) Human resource planning, which includes creating venture teams with a balanced skill-mix, recruiting the right people, and voluntary team assignment. This strategy analyzes and determines personnel needs in order to create effective innovation teams. (2) Performance appraisal, which includes encouraging risk taking, demanding innovation, generating or adopting new tasks, peer evaluation, frequent evaluations, and auditing innovation processes. This strategy appraises individual and team performance so that there is a link between individual innovativeness and company profitability. Which tasks should be appraised and who should assess employees' performance are also taken into account. (3) Reward systems, which includes freedom to do research, freedom to fail, freedom to form teams, freedom to run businesses, balancing pay and pride, noticeable pay raises, dual career tracks, promoting from within, recognition rewards, and balancing team and individual rewards. This strategy uses rewards to motivate personnel to achieve an organization's

goals of productivity, innovation and profitability. (4) Career management, which includes empowering people, leading by example, and continued education. This strategy matches employees' long-term career goals with organizational goals through continuing education and training.

Minbaeva et al, (2003) and Minbaeva, (2005) maintain that absorptive capacity can be enhanced by investing in human resource management practices, such as employee training or performance-bound incentives, that support the ability and motivation of the employees to absorb knowledge, and by creating an environment that enhances frequent communication and knowledge sharing. Lyles and Salk (1996), and Lane et al. (2001) find training programs to be an important knowledge acquisition mechanism. They claim that, when properly organized, training programs are also important vehicles for establishing contacts between local and parent companies' employees, and thus promote collaboration and knowledge exchange. Learning can be stimulated through reward systems and training (Mahnke et al., 2005; Daghfous, 2004). These actions lead to higher individual absorptive capacities and, consequently, to a higher capacity of the organization as a whole.

Rothwell and Dodgson (1991) hold that (small) firms need well-educated technicians, engineers and technological specialists to access knowledge from outside their boundaries. For Mangematin and Nesta, (1999) conventionally numbers of qualified scientists and engineers in firms are also seen as a proxy measure of absorptive capacity. Similarly, Vinding (2004) stresses that formal education, work experience, the organizational set-up and development of a closer relationship with external and internal actors, all matter for the determination of absorptive capacity. There is also extensive evidence that investments in employee training and acquisition of new skills develop a firm's absorptive capacity. In fact, investments in training pay off in terms of enhancing the human capital of the firm and that in general there is a positive relationship between employee training and organizational performance, (Delaney and Huselid, 1996). Human resource management practices have been shown to have positive linkages to absorptive capacity (Huselid, 1995). For Kamoche and Mueller, (1998) managing human resources to achieve better knowledge-related outcomes means "retaining personnel, building their expertise into the organizational routines through learning processes, and establishing mechanisms for the distribution of benefits arising from the utilization of this expertise".

7.4. *Organizational Routines*

SMEs can also rely on organizational routines to build absorptive capacity. Organizational Routines are essential elements in inter-organizational knowledge sharing and learning. Routines entail standard procedures, rules, and patterns of behavior which facilitate more effective organizational decision-making processes (Parmigiani and Howard-Grenville, 2011). Firms' ability to learn will depend on the internal characteristics of the company and on its

organizational learning capabilities (Teece et al., 1997; Zahra and George, 2002). Absorptive capacity as a specific type of dynamic capabilities has received attention in connection with organizational routines. Absorptive capacity can be looked at as a set of organizational routines and processes, by which firms acquire, assimilate, transform, and exploit knowledge (Zahra and George, 2002).

Van Den Bosch et al., (1999) maintain that the absorptive capacity of a firm is determined by its expertise in stimulating and organizing knowledge sharing. Practices such as forming workgroups made up of actors from different departments, stimulating job rotation, managing proposals submitted by employees, and encouraging employees to read and monitor relevant literature and developments can certainly help facilitate the flow of knowledge (Mahnke et al., 2005; Jones and Craven, 2001; Cohen and Levinthal (1994).

Lewin et al (2010) defined a number of routines and processes as constituents of absorptive capacity. They decomposed these routines into three sets of high level routines (or metaroutines) which are related to internal absorptive capacity, external absorptive capacity and the interfaces between these two. The Internal absorptive capacity metaroutines involve informal and formal routines to enable emergence of new ideas, selection of ideas for further development, knowledge sharing and combination, and finally routines for reflecting on, updating, and replacing old practices. The external Absorptive capacity metaroutines entail routines for identifying external knowledge and routines for learning from and with external organizations. The authors add a third set of routines which act as interface between internal and external absorptive capacity routines and include management of adaptive tension and transferring the knowledge back to the organization.

Teece (2007) disaggregated dynamic capabilities into three set of routines and processes through which companies can sense and then seize opportunities and afterwards maintain competitiveness through enhancing, combining, protecting and reconfiguring the assets. Each of these capacities relies on a set of underlying processes and other organizational tools. Internal search and access to external knowledge (from suppliers, customers and research institutions) are the fundamental outcomes of routines for sensing. Technology selection and investment decisions, network and alliance activities, and learning and knowledge creation activities and changes in organizational structure, processes and business model are suggested to be outcomes of opportunity seizing related routines.

Routines are in some cases designed to produce change—e.g. new product development routines—and in other cases they encompass and provide analytical access to sources of endogenous change (Becker and colleagues, 2005; Nelson and Winter, 1982). Some scholars define innovation as new combination of existing routines (Parmigiani and

Howard-Grenville, 2011) and for the same reason, organizational routines are argued to be quite valuable in providing a deeper understanding of innovation in organizations (Becker et al., 2005). Nelson and Winter (1982) argued that routines describe organizational behavior, and change of this behavior leads to organizational change (Nelson & Winter, 1982). In other words, routines are the aggregation of the individual behavior of the employees or collective behavior of the organization. Organizational routines are suggested to be basic components of organizational behavior and repositories of organizational capabilities (Nelson & Winter, 1982). Eisenhardt and Martin (2000) argued cross-functional R&D teams, new product development routines, quality control routines, and technology and knowledge transfer routines, and certain performance measurement systems as micro foundation of firms' dynamic capabilities to deal with technological change and market dynamism. Similarly, Peng et al (2008) suggested that firm's innovative performance is dependent on routines involving the search for new technology, process and equipment development, and cross-functional product development.

To improve on organizational routines SMEs must ensure they have a conducive communication climate. The communications climate can go a long way to improve a firm's absorptive capacity. Communications climate is the atmosphere within the organization that defines accepted communication behavior, which may facilitate or hinder the communication processes (Brown, 1997). A growing body of literature has confirmed that an open, supportive climate can greatly improve employees' ability to learn, which leads to effective implementation of new ideas. Nevis et al (1995) regard a "climate of openness" as one of the factors facilitating organizational learning. Similarly, Levinson and Asahi (1995) point out that an open culture that views change as positive can facilitate organizational learning. Another important element of an open climate is "safe failing" that encourages risk-taking. Learning is in fact a trial and error process that requires an experimental mind-set (Nevis et al., 1995). There is therefore a need to establish effective communication channels to enhance the sharing knowledge such as regular discussions, workshops, internships, or virtual meetings by utilizing information and communication technology such as tele-conferencing, emails, mailling-list, web-discussion-forum, web-conferencing, wikis, blogging, and others. Alton Chua (2003) conducted research on the relationship between types of knowledge shared and the appropriate type of communication channel. He classified the 7 types of communication channels in his research, namely email, regular meetings, face-to-face interaction, telephone, chat over lunch or coffee-break, a common database, and a written memo. He found out that the effectiveness and suitability of a channel to convey messages in that channel related with the channel richness.

8. Conclusion

FDI can play a critical role in the growth of SMEs. Developing countries therefore need to relentlessly attract FDI. But just having the presence of TNCs is not enough in enhancing the growth of SMEs. There is need to support the linkages between TNCs and local firms. One way of doing this is to support SMEs in developing absorptive capacity. Among other ways this could be done through workforce development programs, human resource practices and organizational routines. Developing countries therefore need to do research in ways of promoting workforce development programs to enhance absorptive capacity for local firms, and to support good human resource practices and organizational routines.

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