Small business performance in multinational corporations’ suppliers network

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ABSTRACT

The aim of this study is the analysis of the influence of a multinational company (MNC) on the labour productivity of suppliers as well as non-suppliers in a local supplier network. Our study has shown the existence of knowledge transfer influencing the small business labour productivity, through the productive linkage established with local suppliers and their hiring of MNC former managers. Thus, direct local suppliers have been higher labour productivity than local suppliers from lower levels of the supply chain. Local suppliers hiring MNC former managers have shown higher labour productivity than those who have hired only local managers.

1. Introduction

This research paper studies the influence of a MNC on the labour productivity of local companies integrating its local supplier's network. Particularly, we have analysed the relationship between local suppliers’ labour productivity and the nature of their linkage with the MNC. We have tried to check whether there exist significant differences in labour productivity according to the type of linkage between the local supplier company and the MNC.

The present paper is organized into 4 sections. Section 1 describes the conceptual framework and the hypotheses proposed. Section 2 details the methodology and data employed. Then, Sections 3 and 4 present the results of our research work and the main conclusions drawn.
2. Conceptual framework and Hypotheses

According to Blomstrom and Kokko (1998), productivity spillovers are generated when local companies increase their productivity by imitating or adopting the technology employed by the foreign company.

Thus, local SMEs may benefit from a MNC through different channels. The first one is related to workers' mobility. Local companies may be recipients of the MNC knowledge and skills when they hire MNC workers or when MNC workers decide to set up their own company. They incorporate the knowledge and skills acquired during their stay at the MNC into the local company (Sousa, 2001; Fosfuri et al., 2001; Glass & Saggi, 2001; Görg & Strobl, 2002).

Second, backward linkages may generate productive and technological knowledge transfer. That is, local managers may acquire advanced skills during their productive linkage with the MNC, either because the MNC is interested in the improvement of its supplier or because the MNC suggests this improvement for the productive process of its supplier in view of the fact that its market gaining capacity will help the MNC in the design and development of new products. Finally, due to the demonstration effect caused by the presence of the MNC, it may sometimes make local companies adopt imitation strategies (Görg & Strobl, 2002).

This paper will focus on the productivity spillovers generated into the local supplier networks through the three channels mentioned before. For these three cases, since the nature of the relationship between SMEs and the MNC is quite different, the level of knowledge transfer will be consequently different according to which of the three cases we consider. Following we will analyse in detail the first two channels. The purpose of the present work is to contribute to bridging this gap.
Knowledge transfer through workers’ mobility

SMEs included in the local suppliers network may incorporate advanced technological knowledge about the productive process either when workers are hired by local companies (Fosfuri et al., 2001) or when workers start their own companies (Görg & Strobl, 2002).

MNC workers and managers transfer the knowledge and skills they acquired during their stay at the MNC when they are incorporated into local companies. Thus, those companies set up by former MNC workers tend to show a quite high increase in productivity when compared with the rest of the local companies (Gorg and Strobl, 2002).

Companies set up by MNC former executives have a higher volume of knowledge and skills in production and management than those established by local entrepreneurs. Thus, local companies with MNC former staff will yield a better performance than those with local workers/managers.

This reasoning leads us to state our first hypothesis:

H1: Those Supplier companies, started by MNC former executives, tend to show higher labour productivity than those set up by local entrepreneurs.

Knowledge and skills transfer derived from workers’ mobility will be higher than that acquired by the effect of imitation or demonstration. Therefore, we can state a second hypothesis:

H2: Local companies hiring MNC former managers will show higher labour productivity than those with local staff.
MNCs are encouraged to prevent the flow of information that may enhance the performance of their local competitors. However, at the same time, the MNC might be interested in transferring its knowledge to its local suppliers (Smarzynska, 2002) since the absence of externalities could bring about significant disparities in productivity between foreign and local companies (Kathuria, 2000).

The high level of interdependence between the MNC and its local suppliers turns the local supplier network into a business ecosystem (Moore, 1993; Finegold, 1999) in which its members co-improve their knowledge, capacities, and skills (Moore, 1996; Van den Bosch et al., 1999; Helfat & Raubitschek, 2000; Van der Berg & Stagl, 2003), providing each other with the skills they have best developed. Therefore, the supplier turns into a 'strategic' partner.

The MNC, now interested in the development of its supplier system, will establish close cooperation links based on mutual trust (Bordenave & Lung, 1996; Sadler, 1994; Saxenian, 1994) allowing both parties to evolve within an increasingly dynamic frame (Koza & Lewin, 1999; Zollo & Winter, 2002).

Accordingly, it seems mandatory to assume that those companies keeping a direct productive relationship with the MNC will be exposed to a greater volume of information than those which, even belonging to the same local suppliers’ network, are situated in lower levels of the supply chain and maintain an indirect relationship with it through other first tier suppliers. In consequence, we could make the following hypothesis:

H3: First tier suppliers will show higher labour productivity than second and third tier suppliers.
3. Methodology

*Characteristics of the sample*

A local productive system (LPS), involved in the production of lighting systems for automobiles (main and auxiliary headlamps and rear lighting), was selected. The LPS is made up of small and medium sized companies and led by a single multinational corporation which contracts out to the local industry. The final questionnaire was sent to all auxiliary companies which made up the LPS, used as sample of the population. The questionnaire was to be answered by the highest-ranking executive in the company.

**Table I: Technical data**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective universe</td>
<td>Auxiliary industrial companies</td>
</tr>
<tr>
<td>Geographical domain</td>
<td>Local productive system in Martos (Jaén-España)</td>
</tr>
<tr>
<td>Unit of sample</td>
<td>Companies</td>
</tr>
<tr>
<td>Size of the sample</td>
<td>61</td>
</tr>
<tr>
<td>Date of fieldwork</td>
<td>September 2003</td>
</tr>
<tr>
<td>Subject of the questionnaire</td>
<td>General Manager or Firm Owner</td>
</tr>
</tbody>
</table>

*Variables analysed*

In order to test the hypotheses, a set of variables relating to the nature of the links binding the auxiliary companies with the MNC was used. Thus, the independent variables used were those relating to local executives’ perception about the MNC influence on the development of their local firm(ok), their perception about the MNC support, and the relationship of the firm owner or part of its board of directors with the MNC. For the dependent variable, the labour productivity was considered, calculated with the quotient obtained by dividing the volume of turnover by the number of workers, as used in the work of Görg and Strobl (2002).
4. Results

We have employed a cluster analysis to detect the presence of different groups of companies according to the nature of their linkage with the MNC (if the founder or part of the board of directors have previously worked for the MNC), and the influence perceived by MNC local managers on the establishment of companies in the host territory. Results are shown in Table 2.

Table 2: Typology of companies according to the MNC influence

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Labour links with firm owner</th>
<th>Labour links with executives</th>
<th>MNC presence influence</th>
<th>MNC support relationship influence</th>
<th>Percentage of companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>36.84</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>5.26</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>57.90</td>
</tr>
</tbody>
</table>

ANOVA

<table>
<thead>
<tr>
<th>Squared mean</th>
<th>Degree of freedom</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.211</td>
<td>2</td>
<td>0.000</td>
</tr>
<tr>
<td>1.624</td>
<td>2</td>
<td>0.000</td>
</tr>
<tr>
<td>0.722</td>
<td>2</td>
<td>0.008</td>
</tr>
<tr>
<td>0.722</td>
<td>2</td>
<td>0.008</td>
</tr>
<tr>
<td>1.433</td>
<td>2</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Cluster number one is formed by those companies founded by local entrepreneurs with no previous labour linkage with the MNC. In this case, the MNC support consists of the assessment offered by its engineering teams for the improvement of the productive process. Most of the companies constituting this cluster are not considered by the multinational company as strategic suppliers. This cluster was identified as Suppliers without MNC former labour links.

Opposite this cluster is cluster number three. It presents the highest values for all of the variables. It consists of a group of companies founded by MNC former workers and some of its managers that have also worked for the MNC. Thus, managers of these companies express that they have received direct support from the MNC and that the presence of the MNC in the territory and their relationship with it have helped improve the development of local companies. Four out of the five strategic local suppliers to the MNC belong to this group. We called this cluster Suppliers with MNC former labour links.
Finally, cluster number two comprises the only company founded by a former worker to the MNC but with no support from the MNC for its establishment and development. Its founder expresses that the presence of the MNC has not contributed to the development of his company.

In order to contrast hypothesis 1, we used a T-test for independent samples to be able to compare the means of clusters 1 and 3. In this respect, results for the Levene test obtained for F were equal to 0.136, with a level of significance of 0.719. Thus, we can assert that there are not significant differences between both groups with respect to productivity. Results are shown in Table 3.

**Table 3: T-test for means comparison results**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Levene test</th>
<th>Productivity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Significance</td>
</tr>
<tr>
<td>Influence Cluster (1-3)</td>
<td>0.136</td>
<td>0.719</td>
</tr>
<tr>
<td>Labour links with executives</td>
<td>6.478</td>
<td>0.024</td>
</tr>
</tbody>
</table>

Therefore, we have proved that, though cluster number three is formed by companies set up by former MNC managers and workers, these companies do not show higher productivity than those established by local entrepreneurs. Findings make us reject hypothesis 1.

This confirms the interest of the MNC in co-evolving with its local suppliers. The foreign company will get involved in the development of its local suppliers who are integrated to the daily process of the company, closely collaborate in the design and development of the products, and are permanently supervised by MNC engineering teams. In this way, the foreign company transfers significant knowledge through backward linkages in order to level the productivity of its local suppliers.
We will now deal with the existence of productivity differentials in local companies established by local entrepreneurs. For this analysis, we used a T-test for independent samples in order to compare means, but now considering whether at least part of the managers hired by local suppliers have previously worked for the MNC or, on the contrary, if no manager has maintained previous labour linkage with the MNC.

In this respect, results obtained with the Levene test for F were equal to 6,478, with a level of significance of 0.024. Thus, we can state that there are significant differences between both groups with respect to productivity level. This is, local entrepreneurs who have hired local managers from the MNC show a higher level of productivity than those that have hired only local personnel. Then, hypothesis 2 is validated.

We then performed a new cluster analysis in order to group local supplier companies according to their direct or indirect linkage with the MNC and to the kind of relationship of their founders and managers with the foreign company. Results for this analysis are detailed in Table 4.

### Table 4: Typology of companies according to the relationship with the MNC

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Direct supplier</th>
<th>Labour links with firm owner</th>
<th>Labour links with executives</th>
<th>Percentage of companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>14,28</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>61,90</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>23,80</td>
</tr>
</tbody>
</table>

ANOVA

<table>
<thead>
<tr>
<th>Squared mean</th>
<th>Degree of freedom</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,322</td>
<td>2</td>
<td>0,001</td>
</tr>
<tr>
<td>2,476</td>
<td>2</td>
<td>0,000</td>
</tr>
<tr>
<td>2,000</td>
<td>2</td>
<td>0,000</td>
</tr>
</tbody>
</table>

Cluster number two shows the highest values for all variables included. This group is comprised by companies established by MNC former workers, keeping a direct linkage of supply with the foreign company, and part of their board having formerly worked for the MNC.
On the other hand, cluster number three includes companies set up by local entrepreneurs from lower levels of the supply chain, which maintain no direct linkage with the MNC. These companies are usually dedicated to intensive low-qualified labour.

Their founders are local entrepreneurs who have envisioned a market opportunity associated to the presence of a foreign company. They are mainly suppliers to MNC suppliers and belong to the second level of the local supply chain.

Finally, cluster number one is the smallest group of the local supply chain (14.28%) and is formed by those companies that have been set up by local entrepreneurs and maintain a direct subcontracting linkage with the MNC.

In order to contrast hypothesis 3, we carried out two T-tests for independent samples to be able to compare, first, the means of clusters 1 and 3, and second, the means of clusters 2 and 3, about productivity. In this respect, when comparing clusters 1-3, results obtained after the Levene test for F were equal to 11.468, with a level of significance of 0.020. Thus, we can assert that there are significant differences between both groups with respect to productivity. Our findings are shown in Table 5.

<table>
<thead>
<tr>
<th>Table 5: T-test for means comparison results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
</tr>
<tr>
<td>-----------------------------</td>
</tr>
<tr>
<td>Suppliers Cluster Clusters</td>
</tr>
<tr>
<td>Suppliers Cluster Clusters</td>
</tr>
<tr>
<td>1 and 3</td>
</tr>
<tr>
<td>Clusters 2 and 3</td>
</tr>
<tr>
<td>Clusters 1 and 2</td>
</tr>
<tr>
<td>Strategic and Non-strategic suppliers</td>
</tr>
</tbody>
</table>

Comparing clusters 1-3 for the Levene test, results obtained for F were equal to 4,859, with a level of significance of 0.050. Thus, we can state that there are too many significant differences between both groups with respect to productivity.
The statistical analysis has shown how direct suppliers (clusters 1 and 2) present a higher level of productivity than indirect suppliers (cluster 3), no matter if companies keeping a direct linkage were established by former workers or managers from the foreign company or if they have hired managers qualified during their stay at the MNC.

After the analysis of means for clusters 1 and 2 for the Levene test, results obtained for F were equal to 0.800, with a level of significance of 0.397. Thus, we can confirm that there are not significant differences between both groups with respect to productivity. These findings reinforce the conclusions drawn after the analyses performed in order to contrast hypothesis 1. This second analysis shows that the influence of Backward linkages is stronger than Workers mobility.

5. Conclusions

Our findings show that those companies maintaining a direct productive linkage with the MNC present higher productivity than those from lower levels of the supply chain (second level and the next) which maintain an indirect supply linkage with the MNC.

Thus, among direct suppliers, significant differences in productivity have been found for local companies hiring MNC former managers when compared to those which have hired local managers.

At least for this specific case, we have found no significant differences in productivity between local companies founded by MNC former workers and those established by local entrepreneurs. This is due to the interest of the MNC in co-evolving with its suppliers, which makes it become involved in their development and generates a continuous flow of technological and production knowledge transfer from the MNC to them.
References


Görg, H. and Strobl, E., 2002, ‘Spillovers from foreign firms through worker mobility: An


