

**“MNEs impacts on local development:
The case of knowledge-intensive services in Mexico”**

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1. Introduction

This paper seeks to capture the relationship between service providers and large manufacturing companies, in order to understand and size the value that foreign manufacturing contributes to local development through the services it hires for its manufacturing and / or support operations. To do this, we try to determine and interpret the integration of services based on knowledge intensive applications that are within the manufacturing operations. The new economy, digital manufacturing and industry 4.0 are trends that are becoming more generalized and are related to a priority role of knowledge-intensive services within manufacturing.

In the studies on the impact of manufacturing MNEs in Mexico, the predominant issue has been the direct effects on employment; quality of labor and trade balance, and less importance has been given to MNEs' contribution to the development of production of goods and services through local supplier companies. Narula and Dunning point out the importance of indirect ways in which foreign firms impact local productive capacity: "where inward MNE activity results in positive externalities, and when domestic firms have the capacity to internalize these externalities usefully, and if the non- Sector supports domestic capacity building, there will be industrial development ". (Narula, Dunning, 2010: 266).

The general process in which the local impact of the large manufacturing enterprise is inscribed is the outsourcing or servicing (OECD, 2000) of the economy understood as the integration of activities of production of goods and services within the firm. Therefore, to analyze the conditions of the development of regions, it is necessary to understand the

articulations between sectors of manufacturing, and those of services (Daniels, Bryson, 2002, Pilat, Wolfl, 2005). An increasingly diversified economy, which includes the production of services with educational requirements for the labor force and a growing percentage of producer services, is associated with higher productivity and income at the regional level (Greenfield, 1996).

Our research is based on a recent survey that attempts to reconstruct an early part of the value chain linking multinational manufacturing firms in Mexico with their local service providers that are key to the strategy of the former. The methodology is based on interviews with five foreign manufacturing companies from different dynamic sectors located in Mexico and a survey of 40 Mexican suppliers in the field of knowledge intensive services. We offer the data and conclusions of a pilot study with final assemblers that have opened the possibility of contacting locally to service providers.

2. Background: services and manufacturing

An unattended area of studies on the local effects of multinational enterprises (MNEs) in Mexico is that related to their connection with local service provider companies. In studies of the impact of MNE manufacturing in Mexico, the predominant themes have been the direct effect of these on employment, quality of labour and the trade balance, with less importance given to how they contribute to the development of goods and services production through local supplier companies. Narula and Dunning highlight the importance of the indirect ways in which foreign companies impact local productive capacity: “where inward MNE activity results in positive externalities, and when domestic firms have the capacity to internalize these externalities usefully, and if the non-firm sector supports domestic capacity building, there will be industrial development” (Narula, Dunning, 2010: 266). As a result, this paper is interested in exploring the existing relationship between multinationals and their service providers and the degree to which, by imbedding global manufacturing companies, they can be factors for local development.

Services have ceased to be a simple residual activity, statistically defined as that which is not goods. Rather, positive definitions exist that characterise them as intangibles,

invisibles, and perishables in that they are consumed at the moment in which they are produced; also at play is a functional definition that defines services as an activity in which a change in the condition of a person or goods exists, as previously agreed upon by the consumer and producer (Hill, 1977). The difficulty in understanding services as traditional instruments in economic and social analysis is known: output, productivity and innovation are difficult to capture, no statistics are available from surveys and polls and the Oslo Manual itself still fails to generate specific tools to explain what innovation in the “service” product is (Kamp, 2016).

While the service sector is heterogeneous in many way, in recent decades it has been recognized as one of the most important economic activities, given its contribution to employment, trade, added value and, with its overlapping with ICT, to productivity and innovation (OECD, 2000). The broadening of social and economic importance in productive structures of societies, measured by added value and employment as indicators, and consequently, the relative shrinkage or stagnation of the manufacturing production sector, has been referred to, in general, as a process of tertiarization of the economy¹.

The growth in services integrated into manufacturing is a central process in this new state of a tertiarized economy. This is largely due to the expansion of information technologies and communication that have broadened the ways in which operative phases of manufacturing traditionally required service inputs, towards a dual system that in fact always existed: manufacturing and services.

An in-depth look at the dual structure of a company, as illustrated in the study on Stanton Ironworks Company, a typical and celebrated English smelter company created in 1846 and that closed in 2007, shows that services were always in function of processes of production and sales of material products, in a technical symbiosis that has always been difficult for the social sciences: to isolate and understand the differences that exist between goods and services. Hybridization has thus been proposed as the nature of industrial production (Bryson, 2010).

¹ In this general process, the growing relationship of certain services of greater added value, productivity and innovation with manufacturing has been recognized. This process has been labelled servitization, understood as a strategy by manufacturing companies to incorporate services as part of their offer. As such, manufacturing-service systems are referred to.

Within a historical perspective, it is suggested that, in reality, what has been referred to as manufacturing has always been a combination of activities that transforms materials and intangible type activities. That is, manufacturing has always required diverse services. Subsequently, for authors such as Baró (2013), the strong overlap between manufacturing and services makes it difficult to discern the precise boundaries between manufacturing processes and services, particularly in the absence of definitions that account for new realities and are not subject to traditional classification categories. He argues that “service «activities» are functions of the services that take place in firms included in «sectors» (classified as) services, but also in firms that belong to non-tertiary sectors (especially manufacturing firms). It is worth noting that – both if produced within the companies themselves and if they are acquired from a third party – the function of these services is important for manufacturing activities. According to certain estimations, this could be between 60 and 75% of industry input costs of greater added value” (Baró, 2013:36)².

However, current categories do not help the understanding or analysis of the tertiarization process in services linked to production. Some services exist with a direct relationship, in terms of input, to functions of the production of goods and services, and are thus classified as intermediary production services, while others are related to the functional structure of the producing company and are therefore services for companies, divided into real and financial. It has been observed that the integration of services and manufacturing has a pattern of behaviour over time within each industrial sector: in nascent stages, services are less important, while as the sector advances towards maturity, the use of services increases in order to defend its market with new offers associated with the same declining product (Kamp, 2016).

Regarding the growing impact of ITCs in service innovation, these expanded from the end of last century as intermediate inputs for manufacturing production. One study

² The same author notes, “The metamorphosis of the industry over the last decades, has revealed changes both in the nature of the «product» – in most cases a «hybrid» of (tangible) goods and the provision of services -, as well as in the (re)configuration of processes of value generation – in which the specifically manufacturing phases of the chain occupy an increasingly less relevant space and, on the contrary, where the phases of creation, design and ultimately, of distribution, sales and post-sales of the product, gain greater importance -, as, finally, the profound changes in the geography of this new industry and their enhancing elements (logistical assets, provision of an effective base of support services for the production, distribution and financing of its products...)” (Baró, 2013:38).

conducted with data from the OECD showed that knowledge intensive manufacturing sectors (office and computer equipment, professional equipment, electronic apparatus, communications, chemicals and pharmaceuticals), are the highest consumers of the following services: financial, business and communications services. The study concluded that a country's capacity to competitively develop these types of services is intimately related to the type of manufacturing structure it has (Guerrieri, Meliciani, 2005).

Thus, in order to analyse the development conditions of countries and regions, it is necessary to understand the articulation between manufacturing sectors that have classically been considered to be the architects of development, and those of services, understanding the diversity of these and their unequal importance as ambits of work in terms of remuneration, quality of labour, productivity, etc. (Daniels, Bryson, 2002; Pilat, Wolf, 2005). An increasingly diversified economy, that includes the production of services with educational requirements for the work force and a growing percentage of services to the producer, is associated with greater productivity and income, on a regional level (Greenfield, 1996).

3. Methodology

We have two hypothesis related to the diffusion of KIBS (knowledge intensive base suppliers) as they are linkage to the OEMs.

Hi. 1: The OEM is transfer knowledge to the supplier in order to develop their capabilities.

Hi. 2: The most dynamic sector of the OEM increase the knowledge transfer to the supplier

a) Framework of reference

Within the context of the integration of production chains, strong emphasis has been placed on the study of the supply of input material to multinational companies, reflected in official statistics with a dramatically low percentage of national content integrated into exportations. This has led to multiple initiatives to develop suppliers that over time, such as in the case of the maquiladora industry and exportation manufacturing (IMMEX) for

example, have not shown sufficient evidence of impact neither in increasing content of national origin, nor in employment creation.

Including when a low national content is reflected (of around 5 to 8% of the value of production), the question remains as to whether supplier inputs are, to a large degree, importations, so that true content is more limited and thus appropriation of national value of such input suppliers, is constrained.

Regarding services, this is a small-scale consumption segment as percentage value of exports, however, it may be assumed that the potential of the appropriation value is higher with respect to intermediary industrial goods, due to the fact that the contribution to employment, even considering a higher level of specialization of this personnel in various operations, represents a greater percentage of participation in cost structures.

This research seeks to understand and assess the appropriation of value achieved through the supply of services by Mexican companies contracted by multinational companies for manufacturing and support area operations.

It is known that a diversity of services is consumed basically both locally and nationally, thus this first approximation to the issue seeks to explain the profile of Mexican origin companies that have integrated into multinational chains, be it at a high or low level of service specialization, and, if these exist, to distinguish between interactions and impact.

The learning purpose is framed within contemporary discussions around MNEs and economic development, the role of advanced services in local development, the conceptualization of services and manufacturing, the tendency towards 4.0 manufacturing, and Mexican service providers versus international service providers.

The results of this study will show the effects and impacts of participation by companies providing knowledge intensive services in multinational company chains.

b) The survey

The methodology of this study was based on a survey in small, knowledge intensive, domestic companies. For the fieldwork, a group of 5 large multinational

companies in Mexico were identified, based on their recognition in dynamic sectors of Mexican exportation activities, such as electronics, automobiles-auto parts and medical devices. A questionnaire was designed for these firms and applied face-to-face, with telephonic support and follow-up.

We developed an instrument with the following structure: the companies' profiles, their practices of selection and support to suppliers (development of suppliers), as well as including a request for references of at least ten national suppliers of services contained in a catalogue of predefined categories based on the North American Industry Classification System (NAICS).

The supply companies referred to by the MNEs were addressed in a cascaded system. For this, a second questionnaire was developed which, in addition to the profile of each company, sought to identify the capacities that have been developed as well as the direct and indirect impacts generated by their relationship with the multinational, particularly those related to the growth and appropriation of value. The questionnaire to suppliers was administered by phone.

While the number of observations was limited (**40 cases**), the information obtained was statistically processed to reflect the most common modalities by which MNEs support their suppliers, the differences between one chain and another and the particularities that exist between cases of medium to low specialization service suppliers and those of companies providing high specialization.

Throughout the research process, special emphasis was placed on obtaining direct information from key actors regarding the client-supplier relationship, such as those responsible for procurement and institutional relations in the case of multinational firms; and owners, general directors or those responsible for marketing in the case of national service providers.

Defining the sample

An intentional sample was determined comprised of 5 multinational manufacturing companies with more than 1,000 employees within the national territory. Priority was given

to companies belonging to those strategic sectors that Mexico encourages: electric-electronics, aerospace, automobile and medical devices. For each of the large companies, 8 to 10 service providers in Mexico were considered.

The following branches of service provider companies were considered, in accordance with the activities classified in the NAICS:

	CATEGORY		CORRESPONDING NAICS
A	Logistics: Cargo transport, couriers and messenger services, storage services	484	Truck transportation
		492	Couriers and Messengers
		493	Warehousing and Storage
B	Computer Services: data processing, webpage design, computer systems design, network configuration and related services.	518	Data Processing, Hosting and Related Services
		5415	Computer Systems Design and Related Services.
C	Engineering and processes services: Consulting for engineering solutions, process improvement, quality systems, productivity and operative efficiency, technical studies.	5416	Management, Scientific and Technical Consulting Services
D	Legal and administrative solutions: Legal, accounting and auditing, marketing and publicity, translation and interpretation services, processors, administrative consulting	5418	Advertising, Public Relations and Related Services
		54193	Translation and Interpretation Services
E	Business support services: recruitment and selection of personnel, <i>outsourcing</i> of personnel, collection, photocopying and document management, credit investigations, travel and events organization.	56131us	Employment Placement Agencies and Executive Search Services.
		56132	Temporary Help Services
		561330	Professional Employer Organizations
		561431	Private mail centers
		561440	Collection Agencies
		561450	Credit Bureaus
		56151	Travel Agencies

		56192	Conventions and Trade Show Organizers
F	Waste and residue management, and remediation services	562	Waste Management and Remediation Services
G	Training: Executive training, trade and other training provided by the private sector	61143	Professional and Management Development Training
		6115	Technical and Trade Schools
		611698	Other Private Sector Education Services
H	Temporary accommodation services (Hotels)	7211	Traveller Accommodation
		7213	Rooming and Boarding Houses, Dormitories and Workers' Camps
I	Food and beverage preparation services: contracted for meetings and events, business and institution canteens	72231	Food Service Contactors
J	Machinery and equipment repair and maintenance services: industrial, commercial and services	811312	Industrial Machinery and Equipment Repair and maintenance
K	Cleaning, security and installation maintenance.	56172	Janitorial Services
		56173	Landscaping Services
		56174	Carpet and Upholstering Cleaning Services
		56179	Other Services to buildings and Dwellings
		56162	Security Systems Services
		561612us	Security Guards and Patrol Services
L	Health services	621	Ambulatory Health Care Services
M	Personnel transportation	48541	School and Employee Bus Transportation
N	Product, material, environment and calibration testing laboratories	541380	Testing Laboratories

Instrument design

Two questionnaires were designed, one for the large companies and another for supplier companies. The questionnaire for the large companies was divided into three sections: profile of the company, supply chain and supply strategy. Questions were formulated regarding company

policy for the integration of national content, including evaluation criteria and selection of suppliers, as well as support for the development of suppliers. Two questions were also included regarding cases of spin-offs and vertical integration.

The questionnaire for the Mexican supplier companies was divided into 4 sections: company profile, dependence on MNEs, knowledge acquisition and value appropriation.

Information collection method

Each multinational company established in Mexico and considered in the study was contacted by phone in order to schedule a visit and subsequently the questionnaire was applied face-to-face with key people, usually in the area of acquisitions or governmental relations.

The selection of participating multinational companies was based on a short directory of previously graded companies as representative of interested sectors, with the five that showed the greatest disposition to participating, being those that formed part of the study.

The multinational firms that were surveyed in this study were:

NAME OF COMPANY	LOCATION	SECTOR
Ford (Hermosillo Stamping and Assembly Plant)	Hermosillo, Sonora	Automotive – light vehicles
Foxconn Baja California	Tijuana, Baja California	Consumer electronics
Medtronic México	Tijuana, Baja California	Medical devices
Toyota Motor Manufacturing de Baja California	Tecate, Baja California	Automotive – light vehicles
Grupo Cipsa	Puebla, Puebla	Automotive – specialized vehicles

In the case of supplier companies, the application of the questionnaire was done primarily via telephone, and complemented with partial information via email as requested in some cases by the representative of the company. In general, the owner, general manager

or sales manager responded to the questionnaire, as was preferred by each company and taking into consideration the contact details provided by the referring large company.

Of the 40 Mexican companies interviewed, 10% were suppliers of Ford, 17.5% of Foxconn, 30.0% Medtronic, 17.5% Toyota and 25% of the Cipsa Group.

Finally, it is worth mentioning that the fieldwork was considerably challenging. In the case of the large firms, difficulties were experienced in arranging face-to-face meetings with representatives. This was due not only to the complexity of diaries, but also to the fact that it was found that the selection and hiring of service suppliers is commonly distributed between various areas of companies (human resources, engineering, maintenance, production, traffic and logistics, amongst others), which therefore necessitated interaction with various company representatives. The lack of centralization of the procurement process in a single person or department in multinational subsidiaries was the first finding of this study.

In the case of service providers, the sample universe was confined to the companies referred to as suppliers by the MNEs, totalling more than 50 prospects to interview. Most of them are located in the same metropolitan area where the OEM is established. Of these, taking into consideration willingness to participate and the possibility of establishing contact, the abovementioned 40 suppliers were interviewed. Identifying and contacting a key person, scheduling a time in which to apply the questionnaire and in various cases, following up via email the submission of figures and specific information that was not readily available at the time of the interview, was an arduous task.

4. Results

The integration of services into manufacturing is a growing issue. Gomis and Carrillo (2016) analysed innovation in multinational service and manufacturing companies in order to show that these sectors are not as different to one another as is believed. In addition, a growing number of studies show that manufacturing companies undertake important service activities (accounting, logistical, after-sales, etc.) (Plascencia, Garcia and Carrillo, 2014). Another regional study that centred on states with a large concentration of

multinational companies, has shown that the manufacturing sectors with the most diversified structures are those that have the closest relationships with local growth in advanced services (financial, communications, business) (Micheli and Valle, 2016).

Furthermore, industry 4.0 is the best demonstration of the convergence of services in manufacturing, both in terms of services as intermediate input to manufacturing production, as well as an integrated service to the product under a hybrid conceptualization (servitization). The example of the self-driving motorcar currently being designed and produced in its initial phase by a broad group of companies, both ITCs as well as traditional manufacturers, stands out as a paradigm of the convergence between services and manufacturing. Continuing this line of thought, this document seeks to explore the relationship between services and manufacturing, but in this case, by observing small Mexican supplier companies with knowledge intensive services associated with multinational manufacturing companies.

The research covered in this paper refers to a central issue: in knowledge intensive companies connected to multinationals, do differences exist between more consolidated and better prepared firms and those with less consolidation? In general terms, there is broad consensus that companies with higher organizational and technological levels are better prepared for insertion in global value chains, that is, to be suppliers of multinational manufacturing companies. This is precisely what will be analysed below.

In order to analyse the previous contention, an indicator was devised that classified the interviewed suppliers into two groups: companies referred to as “**mature with high technology levels**” and “**the rest**” of the companies. This indicator re-groups the cases, and considers the profile of companies, based on two characteristics: (1) the management and decision-making scheme (mature and formal, and family business [less mature and more informal]), and (2) self-evaluation of technological level with respect to competitors (based on a Likert scale for self-evaluation).

Regarding the family business composition, of the sample of 40 suppliers, 66.7% were Mexican family firms; 30.8% were Mexican non-family firms and 2.6% were *spin-offs* (companies derived from the large firm). The first (familial) were companies where key decisions were taken or influenced by members of a family, decreasing the maturity of

management. The second (non-familial) were companies where decision makers had no family relationship, which assumes greater professionalism in management. The third classification (*spin-offs*) was companies that potentially had a formal management system acquired from or inspired by the organization of the company from which they originated. Based on this classification, two groups were formed: Group 1 were companies presumed to have immature or informal management and/ or decision-making systems. This included family businesses. Group 2 contained companies presumed to have mature or formal management or decision-making systems. This group included non-family businesses and the *spin-offs*. It is worth mentioning that this sample did not find companies that were: branches or affiliates of foreign companies, franchises or licenses or first-time entrepreneurs.

Regarding the technological level, the question asked to companies was the following: Regarding support technology for your operations (equipment, telecommunication systems, computer and software systems, amongst others), how would you classify the level of your company in comparison with competitors? Answers, all in relation to their competitors were: “well under”; “slightly under”; “equivalent”; “slightly better” and “much better”. This was then used to distinguish companies with a high technological level (or technologically superior or mature), and the rest. 30.8% of suppliers had a technological level equivalent to their competitors; the same percentage (30.8%) considered themselves to have a slightly better level and 38.5% commented that they were much better than their competitors.

The maturity indicator (organizational and technological) was obtained by combining these two grouped variables. Of the total in the sample, a small percentage of companies were found to be organizationally and technologically mature. 20.5% of the SMEs fell in this category while the vast majority, 79.5% were found to be less organizationally and technologically mature. This low percentage of better-prepared companies coincided with the results of other studies regarding multinationals in Mexico where the innovative vocation of companies was analysed, as well as social inclusion (Carrillo and Gomis, 2014), in addition to another study regarding maquiladoras and their evolution (Carrillo and Gomis, 2005). These studies showed that between 20 and 30% of

companies are in a far better condition to confront the challenges of globalization. In any event, it is worth highlighting that particularly with regards industrial policies (vertical and horizontal), the majority of knowledge intensive SMEs, despite their links with multinationals, are markedly disadvantaged given their organizational and technological level.

Using this indicator, it was sought to understand if the socio-economic profile of these companies was different according to the organizational and technological level, and if issues, such as knowledge transfer of multinationals and types of companies, is associated with it. The results are presented below:

1. Socio-economic profile

a. Sales. Those SMEs under analysis that were more mature and technologically superior showed a greater volume of sales than the rest of the companies, almost 12 times more: \$122.5 million pesos versus \$10.5 million pesos. The variable relationship was very significant.

b. Employment. More organizationally and technologically mature companies generated a higher volume of employment. In the sample, this was more than double (Table 1). However, and contrary to what was expected, it appeared that companies with a lower grade of organizational and technological maturity employed more professionals, although the relationship was not significant. This contrasts with the idea that the more innovative companies are those that employ more professionals (Table 2).

c. Supplier selection. Reasons for selecting a particular company as a supplier to large firms were varied. Questions were asked as to how important the four categories were that had been identified in the design of the questionnaire: i) lower costs, ii) speed of attention, iii) quality and iv) reputation or prestige. On review of the variable and using it as a point of comparison between mature and technologically superior companies and the rest of the

supply companies, the following was found: the costs of the supplier, in general terms, were not that relevant in the selection process; these were only relevant for a quarter of the innovative companies and for almost a third of the rest of the companies. On the contrary, the speed of attention was crucial in the selection of a company by the assembly plant: this was true for 75% of the mature and technologically superior SMEs and 90% of the rest of the companies. Equally, quality was fundamental. 100% of the mature companies consider this factor to be very important and 97% of the rest. Finally, reputation or prestige of the company was also important but to a lesser degree: only 62% of the mature SMEs and 77% of the rest considered this important (Table 3).

2. Knowledge transfer

a. Support. Some SMEs had received support from their clients. Questions regarding support were in function of the referring company, that is, the large manufacturing company that had originally been approached, or other exporting manufacturing companies. For the purposes of this document, answers to the series of questions were classified according to organizational, financial and equipment support. Both the support received from the large company that initially referred the supplier as well as other export companies was included. The comparison between the mature and technologically superior companies and the rest of the companies showed that the former received greater support in terms of organization: 62.5% compared with 48%. On the other hand, regarding equipment, greater support was provided to companies considered less mature and with less technology: 32% against 12.5%. Finally, with regards financial support, companies had received little support (or had not needed it) from the multinationals: none of the “better prepared” SMEs considered that there was support, and only 19% of the rest said that this was available. This refers to the transference of *know-how* from multinationals to domestic companies. In summary, the interaction between multinational companies and the majority of the mature and technologically superior companies and half of the rest was only significant in the case of best organizational practices (Table 4).

b. Knowledge acquisition. The SMEs had benefitted from their interaction with multinational companies. They were asked to describe what they had learned as a result of being a supplier to multinational companies. Questions were classified according to organizational, technological and labour knowledge. When comparing mature and technologically superior companies with the rest, it was found that levels of knowledge acquisition were similar in both with regards organization (62.5% and 68%). Regarding technological knowledge, the result was greater from less mature companies with less technology: 50% as opposed to 64.5%. Finally, regarding labour, suppliers had learnt a great deal from their interaction with multinationals: 75% in the mature and technologically superior ones and 71% in the rest. While the relationship between these two types of companies and the knowledge acquisition variable is not significant, it is important to highlight that learning is high in matters related to labour and organization and considerable regarding technology. This confirms the thesis that global companies transfer knowledge to their local supplier companies, which is crucial in understanding industrial escalation and local development (Table 5).

3. Types of companies

a. Types of services. What type of services are offered by knowledge intensive Mexican SMEs? These services tend to be either highly specialized or basic type services.

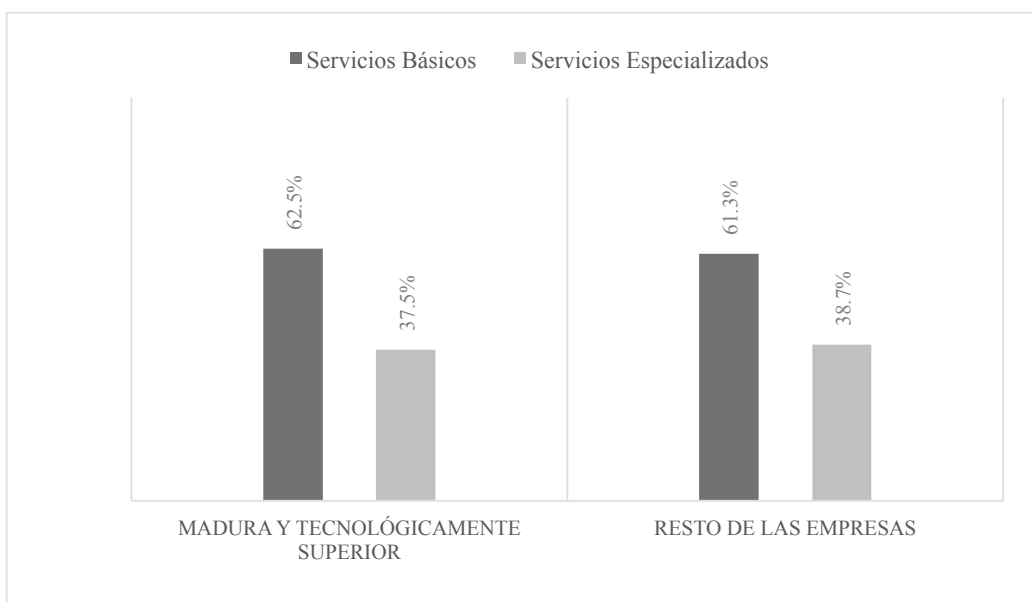
Regarding the type of service offered by suppliers, these were classified in two groups: The first was specialized services, that is, those done mainly by professional personnel or those with special accreditations. Included in this group were the following services, according to the NAICS classificatio³: computation, engineering and processes; legal and administrative; training; and testing laboratories for products, environmental materials and/ or calibration. The second group refers to basic services, that are those not done by professional personnel or those with a special accreditation. Included in this group are the following services: logistics; business support; residue and waste management; remediation; preparation of

³ Sistema de Clasificación Industrial de América del Norte, México, SCIAN 2013, INEGI

food and beverages; repair and/or maintenance of machinery and equipment; and cleaning, security and maintenance of facilities.

Based on the above classification, a smaller percentage of suppliers were found to have specialized services (38.5%) and the rest performed basic services (61.5%).

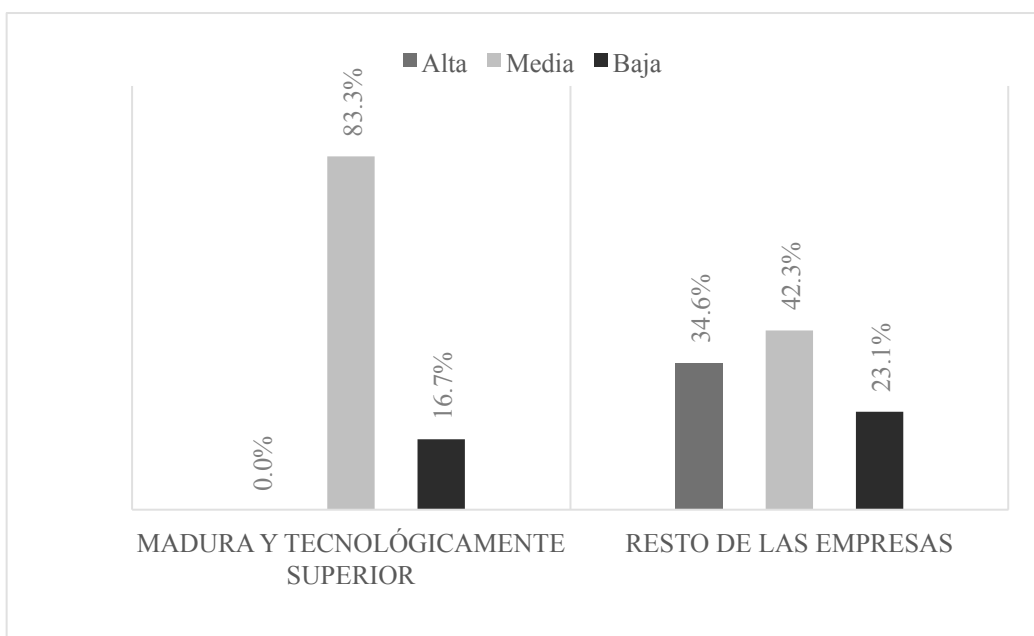
It is noteworthy that companies classified as more organizationally and technologically mature were identical to the rest in terms of the type of service they offered. That is, no relationship exists between more solid and innovative companies and the development of more specialized or basic services, as can be observed in Graph 1.



b. Vulnerability.

This indicator was based on two questions: total number of clients and the percentage of sales to multinational manufacturers. The underlying logic is that companies with few clients and a high percentage of sales to multinationals are likely to be more sensitive to the destiny of these types of companies. If, on the other hand, they have many clients and/or income origin is diversified, then the company would tend to be less vulnerable to fluctuations in demand and cash flow. Based on this rationalization, three levels of

vulnerability were established (high, medium, low) where (a) high meant that a company had few clients and a high percentage of sales to multinationals, (b) medium would have more clients and a lower percentage of sales dependent on multinationals and (c) low, that they have many clients and the percentage of sales to multinationals was relatively low. The results are shown in Graph 2. Mature companies with a high level of technological experience showed no vulnerability while the rest showed 35%. The first group showed mostly medium vulnerability (83%) and much less in the rest of the cases (42%). Finally, vulnerability was low for only 17% of the most solid companies and for 23% of the more familial companies.



Furthermore, companies were asked whether they were seeking to diversify their range of services. 75% of the “mature with high technological level” companies were considering diversifying, with 56.3% of the others considering this. In addition to reflecting a strategic vision, this may show that companies are seeking to depend less on one client and /or on only one type of service. This coincides with what was found in the vulnerability index.

c. Innovation. Companies were asked if they were innovative or had generated some innovation. The vast majority of suppliers, both mature and technologically superior companies as well as the rest of the cases, considered themselves to be innovators: 75% and 81% respectively. While this variable is not significant in explaining the two groups, on one hand, it reflects the perception that companies have of themselves, and on the other, the enormous demand for innovation from their clients.

5. Discussion and Conclusions

- It is noted that a learning and capacity development process exists in service companies (the upgrading process), which mature companies with greater technological capabilities, apparently with greater capacity to begin with. The SMEs use their capabilities to capitalize which is reflected in the increase of sales and complementary supports on the part of the MNE's. In contrast, companies with a lower level of maturity and technological level are largely benefitted by the interaction with the MNEs, as they are able to assimilate new management practices that they would otherwise not be exposed to.
- The sophistication or maturity of companies allows them to develop a better business vision, which includes innovation, diversification of the client base and increase in sales. This is thus a more important indicator of impact and should be looked at for the development of the supplier, rather than the sophistication of the service. (In other words, it is more important how a company is managed than what it offers).
- The speed of attention as a crucial criterion in the selection of service suppliers reflects the importance of a group of factors, including the physical proximity of the service provider to the client (practically all suppliers interviewed were located in the same city or metropolitan area as the large company that referred them) and the

availability of systems for the management of operations that forms part of the maturity of organizations.

- It would be convenient to extend the scope of the study, focusing on gaining information from the perspective of the sectors and regions that would allow a comparison between different sectors and determine levels of local integration of services.

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Annexed Figures

Table 1 Type of supplier company according employment size

Total fo employees	Type of company		Total	Oneway	
	Mature and technologically superior	The rest of the companies		F	Sig.
Total of employees in the establishment	68.6	30.6	38.4	3.40	0.073

Table 2. Type of supplier company according to percentage of employed professionals

	Type of company		Total	Oneway	
	Mature and technologically superior	The rest of the companies		F	Sig.

Percertange of people with university degree in the establishment	43.8	56.3	53.6	0.85	0.360
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Table 3. Type of supplier company according to the importance of reasons why the MNEs selected it

	Evaluation	Type of company		Chi-Square	
		Mature and technologically superior	The rest of the companies	<i>Value</i>	<i>Sig.</i>
Lower costs	Not important	37.5%	17.2%	1.53	0.466
	Not so important	37.5%	51.7%		
	Very important	25.0%	31.0%		
	Total	100%	100%		
Speed of attention	Not important	0.0%	3.3%	2.45	0.294
	Not so important	25.0%	6.7%		
	Very important	75.0%	90.0%		
	Total	100%	100%		
Quality	Not important	0.0%	0.0%	0.27	0.601
	Not so important	0.0%	3.3%		
	Very important	100.0%	96.7%		
	Total	100%	100%		
Renown / prestige	Not important	0.0%	6.7%	2.01	0.367
	Not so important	37.5%	16.7%		
	Very important	62.5%	76.7%		
	Total	100%	100%		

Table 4. Type of supplier company according to type of support received by their clients

APOYO	Si fue un resultado de la interacción	Type of company		Chi-Square	
		Mature and technologically superior	The rest of the companies	Value	Sig.
Organizational	Yes	62.5%	48.4%	0.51	0.476
	No	37.5%	51.6%		
	Total	100%	100%		
Financial	Yes	0.0%	19.4%	1.83	0.176
	No	100.0%	80.6%		
	Total	100%	100%		
Equipment	Yes	12.5%	32.3%	1.23	0.268
	No	87.5%	67.7%		
	Total	100%	100%		

Table 5. Type of supplier company according to type of learning transferred by the MNE

Aprendizaje	Si fue un resultado de la interacción	Type of company		Chi-Square	
		Mature and technologically superior	The rest of the companies	Value	Sig.
Organizational	Yes	62.5%	67.7%	0.08	0.779
	No	37.5%	32.3%		
	Total	100%	100%		
Technological	Yes	50.0%	64.5%	0.56	0.452
	No	50.0%	35.5%		
	Total	100%	100%		
Labor	Yes	75.0%	71.0%	0.05	0.821
	No	25.0%	29.0%		
	Total	100%	100%		