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Location of foreign firms in Portugal: A network approach

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**LOCATION OF FOREIGN FIRMS IN PORTUGAL:
A NETWORK APPROACH**

Abstract

The importance of the Foreign Direct Investment (FDI) and the foreign firm in the Portuguese economy has been rising quite significantly for the last years. Nevertheless, we might say that there has been little scientific research which brings into focus the factors that provide us with a consistent explanation about the location of the foreign manufacturing firm.

This paper aims at shedding light upon the above issue, considering an analytical framework, which integrates the network approach. Within this frame, the social, intra-entrepreneurial, inter-entrepreneurial and institutional networks are supposed to play a relevant influence on the location decision making process of the foreign manufacturing firm.

1. INTRODUCTION

An entrepreneur willing to invest abroad has frequently to ponder the problem of getting information on the most relevant characteristics of the countries and regions, which might offer potential possibilities to invest.

Seeking to diminish the uncertainty, the foreign investor should collect accurate information, which will allow him to identify the most favourable countries and regions to invest. However, information is not as available as one would like to get, either in terms of quantity or in terms of quality. Therefore, the investor should rest upon other sources of information: personal information (stemming from social acquaintances) commercial sources of information (intra-entrepreneurial and inter-entrepreneurial network) as well as institutional (institutional network).

The first part of this paper ascertains to analyse the importance of these networks of information to stimulate foreign investment. The second one seeks to provide results referring to the structure and the importance of the social intra-entrepreneurial, inter-entrepreneurial and institutional networks (both public and private) in the decision making process of the international location of the foreign firm.

2. THE IMPORTANCE OF THE NETWORKS FOR THE FOREIGN FIRM

Applying the network approach to the study of the foreign firm location implies that there should be the possibility of considering the factors' mental representation, which are disseminated through a personal/social relationship. The attractive or repulsive factors of the firm can still be traced in the geographical space; nonetheless, they rest upon the available information on themselves. The set of links is the so-called networks and it might also aggregate relations, which have been established at a social, entrepreneurial or institutional level.

The relational space should be regarded as the stage where contacts can be started and developed. There can be depicted the interaction of the agents, processes and resources belonging to different geographic realities. The agents whom act under these circumstances are the individuals, groups of individuals, firms, groups of firms, industries,

professional associations, universities, research centres, public and private institutions, among others.

The relations can be kept through personal contacts (commercial visits) or electronic means (e-mail, telecopy, and videoconferences). They lack a mutual trust environment, especially when they involve different contractors from different countries. This information exchange process is developed through a changeable (fluctuating) frequency. Regarding international agents, it seems worth mentioning that this process does promote contacts with social economic realities on a national and local basis as they would not know otherwise.

The available resources in the relational space refer to raw materials and subsidiary materials, technologies, ancillary equipment and the products. The resources' heterogeneous nature stems both from its origin (local, national and international), its intrinsic characteristics and from its almost never-ending ways of re-production and combination.

The relational space also includes the manufacturing and transfer processes. These processes evolve within the same or between different geographical frameworks. They involve agents who combine, develop, exchange and reproduce resources while developing their professional activities. Controlling for the manufacturing process is usually an agent's responsibility, while the transfer process relies upon the transmission of the property resources; on the other hand, it seems to be the link between the manufacturing process and the agents.

This relational tissue presents some obstacles that may hinder back the contacts between the local and the national space. The extent of these obstacles is higher whenever the contacts are established between the local/national space and the international, as the most common linguistic and cultural barriers, governmental regulations and distance (physical and psychological barriers) do not stimulate communication or knowledge. Nevertheless, the linguistic and cultural barriers are the most relevant ones, due to the fact that the state intervention has diminished significantly ever since the appearance of huge commercial blocks (EU, NAFTA, etc). Although geographical distances do remain unchanged, the considerable enhancement of the transportation means and the banalisation

of sophisticated telecommunication systems have certainly shortened the psychological distance. The transnationalisation of the firm, the growing trend to globalise the economic activities and the economy as well, seem to justify the above-mentioned statement.

3. THE NETWORKS AND THE FOREIGN FIRM LOCATION

The systematisation of a diversified set of relations has been drafted in the previous section. It seems to depict the general guidelines, which frame the social, intra-entrepreneurial, inter-entrepreneurial, and institutional networks.

3.1. The Social Network

Concerning the location of the foreign firm, the social network includes the set of personal relations that are established by the foreign firm managers with friends or close entrepreneurs (on a national or international basis). These informal relations are grounded on common interests, personal friendship, familiar ties or cultural preferences. These sort of relations, more or less frequent, develop and strengthen trust between the individuals which might even lead to recommend an entrepreneur to invest in a certain region or country.

In the social network the interactions between agents can occur either in the same geographical area (local/local, national/national, international/international) or in distinct geographic contexts (local/national, local/international, national/international).

3.2. The Intra-entrepreneurial Network

This network includes certain formal and informal relations that are established between various partners of a certain firm (clients or suppliers, for example).

It should be said that this network allows for relations that can be started alongside the manufacturing process and the resources' transfer between the foreign firm and its commercial partners (for example, sub-contractors, suppliers, clients, commercial agents, or foreign firms) settled down in one or various countries or regions. Although trust may not be a common attitude among all the agents involved, information can be disseminated among all of them. Therefore, one can say those relations of preference stem from the frequency of the contacts and they rest upon trust.

3.3. The Inter-Entrepreneurial Network

The inter-entrepreneurial network is usually framed by a contractual relationship between a firm and private entities (for example, international chambers of commerce, banks, consultant agencies, etc). Although they do not interfere in the manufacturing process and resources' transfer, the contractual relation might turn out to regulate it claiming they provide the firm with certain services.

The inter-entrepreneurial network may also promote relations (formal or informal) with banks, insurance companies, consultant firms and chambers of commerce located in different countries or regions. These relations may be established when there is an intention to invest (chambers of commerce), to undergo a market research (consultant firms), to request financial information about the client or supplier (bank) or other sort of requirements.

3.4. Institutional Network

The institutional network is made up of national public institutions (governmental agencies) and regional as well (local and regional organisations) that might develop efforts to stimulate foreign investment in a particular country or region.

Therefore, the institutional network includes the relations, which the foreign firm may establish with regional or national governmental agencies. To give a general list of the Portuguese present day situation, it is worth mentioning the case of *ICEP* (Investment, Commerce and Tourism in Portugal). *ICEP* has to promote the Portuguese image abroad; however, incentives to investment and training are *IAPMEI*'s and *IEFP*'s responsibility (the former one is the Institute for Supporting Investment in Small and Medium Firms, the latter one is the Institute for Employment and Professional Training), respectively.

A local approach shows that local political authorities and regional governmental agencies seem to be responsible for stimulating foreign investment. Regarding Portuguese case, the *ICEP* disseminates useful information among foreign investors. In addition, it maintains several regional agencies, in order to pursue this purpose,

while the city hall plays a smaller irrelevant role in some external markets. This poor performance stems from the fact that the city halls do not have a significant authority in this specific area.

3.5. Relational Approach

Different network types, which can mediate and intervene in the region or country selection process, have been drafted in the previous sections. In the following sections it will be attempted to outline the conceptual analysis framework allowing to use the relational approach along with the most traditional factors of location.

The networks (social, intra-entrepreneurial, inter-entrepreneurial and institutional) are the most useful and privileged means to spread information on countries in the process of industrial foreign firm location. Given the information nature of this particular phase, the networks are mainly used to collect information on the countries and regions presenting favourable conditions to implement the firm.

The second phase of the process rests upon information collected by using different network types. This information certainly contrasts with location factors that exist in each country and region. As the location alternatives have been pondered, there follows the negotiating process to install the foreign firm in a specific country and region.

In light of this, the decision making process relies upon the networks' nature, stability and density in the hosting country. These networks are based upon the entrepreneurial and personal relations that derive from the process of resources transfer and the contractual framework of the manufacturing firm (suppliers and clients) as well as formal and informal ties established with private entities (banks, chambers of commerce, etc) and public institutions (governmental agencies or city halls, etc). These links, which may be settled down between the foreign entrepreneur and the individuals (social network), commercial partners (intra-entrepreneurial network), private entities (inter-entrepreneurial network) and/or public institutions (institutional network) located in potential hosting countries and regions that seem to be the informational basis. It provides a good deal of knowledge of their socio-economic characteristics.

Therefore, the decision making process rests upon a dynamic interaction between the foreign investor and its partners (individuals, entrepreneurial or institutional). No matter the situation, more and more information aiming at depicting the features of the countries and regions that might be relevant while choosing a particular country to invest, and select a specific region in a country, and install the firm. In addition, the industrial location factors do exist provided they are depicted and sorted out by potential investors. As such, the use of the network as a privileged tool of dissemination of those factors seems to strengthen the adequate understanding of the whole localisation process.

4. METHODOLOGY

4.1. The Sample

The sample used in this study perceives to capture the importance of the networks' impact on the international localisation of the foreign firm. It is derived from a universe based upon the author's estimation of the foreign industrial firms located in Portugal for the first time.

The major foreign investment projects, which were undergone within the contractual regime framework, have been excluded from this analysis. This regime lives on a negotiating process between the foreign firm and the Portuguese government. There exists a contract that frames some of the duties and rights endowed to both parties. This happens to be considered a conditioning procedure that constrains the selection of a specific country, specially the region, although the choice depends upon the compliance of taxes' exemption, financial incentives or financial grants to labour training.

The sample collects a set of firms that are established in Portugal between 1990-1994. It was decided to shorten the time period in order to facilitate the answers from the firms' managers about those factors, which are considered of paramount importance in the location process.

i) Size

Although seventy four firms have been sent a questionnaire, only thirty seven firms have agreed on answering it. Attempting to show as to whether the size of the sample

can be compared to those used in the same area of research, a set of studies is shown in Table 1.

Table 1
List of Studies on the Foreign Firm Using Survey

Authors	Sample	Technique	Investing Country	Hosting Country	Sector
Hood e Truijens (1993)	22	Direct Interview	Japan	United Kingdom	Manufact. Industry
Beschorner e Mueller (1993)	14	Postal Inquiry	Japan	Germany	All Sectors
Herrin e Pernia (1987)	50 (*)	Direct Interview	Several	Philipeen	All Sectors
Haigh (1990)	20	Direct Interview	Several	USA	Manufact. Industry
Mirza, Buckley e Sparkes (1995)	20	Direct Interview	United Kingdom	Japan	Manufact. Industry
Buckley, Newbould e Thurwell (1988)	43	Direct Interview	United Kingdom	Several	Manufact. Industry
Bachtler e Clement (1990)	30	Direct Interview	Several	United Kingdom	Manufact. Industry and Services
CEC (1993)	90	Direct Interview	Several	Several	Manufact. Industry and Services
Buckley, Berkova e Newbould (1983)	35	Direct Interview	Several	United Kingdom	Manufact. Industry
Sá Marques (1995)	49 (**)	Direct Interview	Several	Northern Coastal Region	Manufact. Industry
Szanyi (1994)	14	Direct Interview	Several	Hungary	Manufact. Industry
Ulgado (1996)	305 (***)	Postal Inquiry	Several	USA	Manufact. Industry

(*) 29 of these firms have foreign capital.

(**) 26 of these firms have 26% of foreign capital.

(***) 228 of these firms have foreign capital.

ii) Composition

The sample was derived from the universe of firms that were previously identified. It was followed an random process, though this criteria did not affect each country relative importance.

As for the firms' distribution alongside the time period of this sample, it should be pointed out that the most significant period is that of 1990 and 1991 as it represents more than 50% of the sample. This seems to be of paramount importance because it finds its grounds in the fact that the flows of Foreign Direct Investment (hereafter referred to as FDI) has reached its peak; that is, it presents higher absolute values as well as a higher relative share (percentage). At that time the FDI was oriented to new investments in industry.

Another aspect it should be brought into focus is that of different productive subsidiaries answering to the questionnaire. Indeed, this fact appears to be more relevant during the first years of the time period under analysis. On the contrary, a single firm represents the subsidiaries of distribution from 1991 to 1994, except for 1990. The joint ventures can only be traced during 1993 and 1994 and they certainly seem to anticipate new forms of FDI in Portugal.

As for a sectorial debate of the present sample, it should be noted that all the manufacturing industry's activities are represented. The textiles, apparel and shoes assemble 32,4% of the sample. Undoubtedly meaningful is the metals manufacturing and machines representing 27% and the chemical industry, rubber and plastic products that reach 21,6%. The other sub-sectors of the manufacturing industry, other than food, drinks and tobacco that represent 5,4%, do not have more than one single firm (2,7%).

An analysis of the sample on the nationality basis of the firm shows that in European Union the German firms are the most representative ones (32,4%), there follows Spain (16,2%), France and Italy (8,1%) and the United Kingdom (5,4%). Sweden, the Netherlands, Finland and Austria are not as representative as the former ones given that these countries do not have more than one firm. No more than 30 European firms were interviewed, representing a sampling quota of 80%.

Japan is also represented in this sample (5,4%) materialising the major investor's perspective in the world. There follows the United States as the most traditional Portuguese investor (2,7%); Switzerland represents 5,4% as a member state within the EFTA framework; finally, Malaysia and Brazil account for 2,7% of the sample and they represent the Asian Continent and the Latin America, respectively.

As to whether this study controls for the firms' size in terms of employment, it can be traced a balance in every level of employees. Nevertheless, the two medium levels (in between 10 and 100 people) seem to be those achieving a higher quota in the sample as they represent about 60% of the firms.

4.2. The Questionnaire

The questionnaire was divided into four major groups of questions. The first group attempted to characterise the firm under analysis; the two following ones sought to depict how the person in charge of the foreign firm understood the location factors, both in a national and international perspective. Finally, the last group of questions was designed in order to frame the relations' network and its nature that existed between the foreign investor and the people, firms and institutions in the hosting country and region (social, intra and inter-entrepreneurial and institutional network).

4.3. Data

This data were collected via personal interview. The person, whom had been responsible for the decision making process of location, answered the questionnaire, and it took place in the selected firm's office. The interview followed a previously structured questionnaire. Whenever this person, whom run the process of location, was no longer in the firm, the manager, was interviewed, provided that he knew the process of location. The interviews took place in between January and July 1996.

5. THE INFLUENCE OF THE NETWORKS ON THE DECISION MAKING PROCESS OF LOCATION: EMPIRICAL EVIDENCE

5.1. Influence of the Social Network

An analysis of the importance of the social network members (Table 2) allows to understand that about 80% of the cases of those whom have been interviewed, have intervened in decision process making to start up the foreign firm. As a matter of fact, it can be stressed that the average importance, considered by those whom answered the questionnaire, is very close to the maximum value of the scale, given that no major variation can be underlined in the total score. Evidence is shown if the low values of the standard deviation are taken into consideration.

Table 2
The Importance of the Social Agents in the Location of the Foreign Firm

Typology of Social Network	Mean (a)	Standard Deviation
With a Portuguese friend	4,55	0,52
With a foreign friend	4,4	0,89
With a Portuguese entrepreneur	4,42	0,78
With a foreign entrepreneur	4,57	0,78
Mixed (Portuguese friend and foreign entrepreneur)	3	-
Total (n= 29)	4,44	0,73

Legend: (a) The grading scale used varies between **very important** (5) and **unimportant** (1).

According to international investors, the most relevant agents were the foreign entrepreneurs (4,57) and the Portuguese friends (4,55). If one approaches the first case, it can be understood the influence of foreign entrepreneurs who invested in Portugal. Their advice and information on the Portuguese characteristics may also be considered as a successful approach to the national market opportunities.

As for the preference of Portuguese friends' advice (4,42) the major explanation seems to stem from a good knowledge of the Portuguese socio-economic features and its specific characteristics of some Portuguese regions. Generally speaking, the social network

is the most significant one as it was used by 29 (78,4%) of those who have answered the questionnaire. It corresponds to a mean of 4,44 in a scale from 1 to 5, which shows a certain influence of the social network in the decision making process.

5.2. Influence of the Intra-entrepreneurial Network

The interviewed entrepreneurial agents have put emphasis on the intervention/influence of the foreign firm (4,14) and suppliers’ (4). However, it appears that it should be considered in this group those contacts that include more than one agent as its influence achieves a higher value than that of the suppliers’ (4,33). The sub-contractors seem to play a less significant importance in Portugal as well as the clients and commercial agent, whose influence was apparently expected to higher than it really is (Table 3).

**Table 3
The Importance of the Entrepreneurial Agents in the Location of the Foreign Firm**

Typology of the Intra-entrepreneurial Network	Mean (a)	Standard Deviation
Clients	2,55	1,66
Suppliers	4	1,41
Commercial Agents	2,66	2,08
Sub-contractors	1,5	0,7
Foreign Firm	4,14	1,06
Mixed (two contacts)	4,33	0,57
Total (n= 29)	3,31	1,58

Legend: (a) The grading scale used varies between **very important** (5) and **unimportant** (1).

Concerning the expected influence of the suppliers and that of the foreign firm to stimulate foreign investment in Portugal, their drive (performance) foresees the geographical locations of their commercial partners. In what refers to the suppliers’ drive, their aim at ensuring their sales at lower transportation costs. In the foreign firms’ situation they seek to increase their negotiation ability with national and regional entities.

If it is considered the clients’ behaviour, their performance seems to achieve a less important role in the whole process. Apparently, it was expected that the presence of a foreign supplier in the Portuguese market would allow for a more efficient provisioning. On the other hand, it is also plausible to consider the fact that the presence of a foreign firm in

Portugal would frame a potential risk/menace for a national firm. Concerning the case of the commercial agents, such argument seems to be reasonable due to the fact that there are agreements that frame the exclusive distribution and which will not be enforced if there is a national branch of the same firm.

Considering the global influence of the intra-entrepreneurial network in the localisation's decision process making of the foreign firm, it can be traced in 29 cases of this study's sample (78,4%). It reaches an inferior mean to that of the social network (3,31). On one hand, it should not be forgotten that buying operations, sales or entrepreneurial co-operation are seldom used for personal knowledge of the intervening partners, depiction of investing opportunities and to assess the country or regions' features. On the other hand, the decision of rejecting a certain country should also be an entrepreneurial strategy used by certain agents, distribution firms or national firms.

5.3. Influence of the Inter-Entrepreneurial Network

The elements that integrate the national entrepreneurial network are, following a decreasing order, the consulting firms or consultants (21,6%), the chambers of commerce (13,5%) and the banks (2,7%). It should also be deemed most important to refer that a significant number of firms did not rest upon the inter-entrepreneurial network entities (62,2%). It is interesting to note that, as previously expected, the relevance of the inter-entrepreneurial network is smaller than that of the other networks (Table 4). As a matter of fact, none of the network's members reaches an average value above 4. For example, the banks did not reach a mean of 3. On the other hand, those who have used the network do not go beyond 38%.

Table 4
The Importance of the National Private Institutions in the Location of the Foreign Firm

Typology of the National and Regional Inter-entrepreneurial Network	Country	
	Mean (a)	Standard Deviation
Banks	2	-
Consulting Firms or Consultants	2,62	1,3
Chambers of Commerce	3,8	0,44
Total (n= 14 e n=13)	3,0	1,17

Legend: (a) The grading scale used varies between **very important** (5) and **unimportant** (1).

The weakness of this network does influence the entrepreneurs' global understanding of the whole situation. In an attitude' scale from 1 to 5, it reaches a mean of 3 (national), which means that this network plays a less relevant role than that of the former networks.

5.4. Influence of the Institutional Network

ICEP and *IAPMEI* were those institutions that were used to convey information by foreign entrepreneurs before they decided to invest in Portugal, 56,8% and 32,4%, respectively of those who answered to the questionnaire. A less significant value (about 30% of the sample) are those who contacted more than one institution. Both *ICEP* and *IAPMEI* seem to be the combination of this group.

Generally speaking, it appears that the national institutions' drive, on an individual basis, in the decision process making does not play a significant role (Table 5), though if contacted in-group the Portuguese institutions, their role appears to gain importance in whole process.

The above statement is somewhat contradictory if one considers those contacts established by the entrepreneurs: 33 of those who were interviewed. Apparently, such paradox suggests that the contact with national institutions is legally enforced, for example such situation happens within the *ICEP*'s framework, or while applying to incentives as it happens with *IAPMEI* and *IEFP*. These contacts were used to shed light upon a few doubts; however, their importance is still low and they certainly do not value the national institutions' role in the whole process.

Table 5
The Importance of the National Institutional Agents in the Location of the Foreign Firm

Typology of the National Institutional Network	Mean (a)	Standard Deviation
Established contacts with a single institution: ICEP	1,38	0,49
IAPMEI	2,91	0,9
Total (n= 33)	1,93	0,99
Established contacts with two institutions:		
IAPMEI e ICEP	2,85	1,57
IEFP e IAPMEI	3,33	0,57
MPOT e IAPMEI	2	-
Total (n= 11)	2,9	1,3

Legend: (a) The grading scale used varies between **very important** (5) and **unimportant** (1).

Therefore, it is easily understood that *ICEP*'s performance is irrelevant (1,38), while that played by *IAPMEI* seems to a little bit more significant (2,91) due to its competence within the national incentive's to investment framework. The joint effort made the national institutions seems to increase their relative importance, especially in what refers to *IEFP* and *IAPMEI* (3,33). These institutions are responsible for the incentives' framework to investment. The problems that seem to hinder back foreign investors are the bureaucratic ones (*ICEP*) and the amount of time devoted to the analysis of the investment projects (*IAPMEI*).

Despite 90% of those who were interviewed have used the institutional network, an attempt, made by, to assess its importance shows a poor performance of the national institutions (1,93). Though, a more favourable opinion (2,9) materialises whenever a joint effort is made by more than one institution.

5.5 Analysis of the Networks' Relative Importance.

Before controlling for the statistic test's results, it seems important to analyse the correlation between the different networks and between these with invested capital (INV) and the employment (EMP) generated by each foreign firm. Two variables were used to convey the networks relevance: the first one, conveys the original scale from 1 to 5 and

the second one is the pattern that comprises the scale in between 0 to 5. The value “0” implies that the network does not interfere in the localisation’s decision process making.

The correlation results can be analysed in Table 6. As for the statistical rigor/accuracy of the variables and the correlation’s significance, the analysis of the results shows that the standard pattern of the attitudes’ scale had a poor influence. Another aspect that should be emphasised is the correlation’s low values between the networks (none of them goes beyond 0,5). This fact implies that there is a complementary relation between all the networks.

In what refers to employment (EMP), it should be underlined a somewhat unexpected sign/notation (negative) of its correlation with the social network (RS), strengthening the importance of the social agents whenever the foreign firm does generate less employment. This suggests that the foreign firm is expected to meet certain requirements (legal, social, etc), which strengthens that it (the foreign firm) has to look up to the formal networks, especially the national institutional and inter-entrepreneurial ones.

Controlling for investment’s point of view, the correlation does not show statistical significance. Nevertheless, only the social network alongside with the national institutional one shows a positive relation with the foreign firm’s capital. In light of this, the utilisation of the national institutional network derives from the application process of the foreign firm to the incentives’ regime and to the contractual grants, while the use of the social network rests upon trust on the hosting country. Risk seems then to explain the above inferences. This idea is more and more associated to any major foreign investment project.

Table 6

Pearson's Correlation Matrix

Variables	EMP	INV	2	3	4
RS (1)	-0,28*	0,06	-0,31*	-0,25	-0,21
SRS	-0,19	-0,04	-0,24	-0,11	-0,17
RINTRA (2)	0,16	-0,25		0,18	0,2
SRINTRA	0,22	-0,15		0,1	-0,11
RINTERN (3)	0,31*	-0,12			0,31*
SINTERN	0,33*	-0,09			0,23
RINSTN (4)	0,39**	0,09			1
SINSTN	0,38**	-0,06			1

Legend: **EMP** – Employment generated by the Foreign Firm, **INV** – Foreign Firm Investment. **RS** – Social Network, **RINTRA** – Intra-entrepreneurial Network, **RINTERN** – National Inter-entrepreneurial Network and **RINSTN** – National Institutional Network, are the variables that assess and control for the networks in the original scale. The variables **SRS**, **SRINTRA**, **SRINTERN** e **SINSTN** control for the networks' respective assessment when the attitude's scale was standardised. The Uni-caudal Test is significant at 5% (*) e a 1% (**).

As for the correlations showing statistical significance between the networks, it should be underlined those that occur between the inter-entrepreneurial and the national institutional one, which is not an unexpected result due to the fact that both pursue converging objectives.

Controlling for the hypotheses, Table 7 offers the results of the *U* test by Mann-Whitney. It was used the statistic programme SPSS 6.1 (Distribution-Free or Non Parametric Tests). The means reflect the assessment differences between the samples that include those who used the networks and those who did not.

As it has already been mentioned, the social network reached a mean of 4,44, gathering 29 contacts. If pondered by the potential number of contacts (n=37), this network's value is not influenced as it does not change. Nonetheless, this is not the case when the Mann-Whitney's statistics are used. This statistical technique weights the total score by the number of contacts. This seems to underestimate the importance of the networks that have established a higher number of contacts.

Therefore, the mean value should be considered as a measure to assess the network's efficiency. Despite the inefficiencies, the high statistical significance (p<0,01) suggests that the social network does influence the location of the foreign industrial firm in Portugal.

The intra-entrepreneurial network presents a very similar influence to that of the social network. Although it shows a significant mean score (3,31 and 2,59), it seems to be influenced by inefficiencies stemming from the considerable number of contacts. This diminishes the total score values. However, this constraint does not question the importance of the intra-entrepreneurial network in the location process of the foreign industrial firm.

Table 7
Results of Mann-Whitney Statistics

Variables	Absolute Mean (a)	Relative Mean (n=37)	Cases		Mean Value		Test <i>U</i>	
			YES	NO	YES	NO	value	Significance.
RS	4,44	3,49	29	8	21,9	8,5	-3,29	p< 0,01
RINTRA	3,31	2,59	29	8	20,79	12,5	-1,96	p<0,05
RINTERN	3,0	1,14	14	23	27,21	14,0	-4,15	p<0,01
RINSTN	1,93	1,73	32	5	18,92	19,5	-0,115	n.s.

Legend: **RS** – Social Network, **RINTRA** – Intra-entrepreneurial, **RINTERN** – National Inter-entrepreneurial Network, **RINSTN**, National Institutional Network. **YES**- Cases where can be traced the network's influence in selecting the country or the region. **NO** – Otherwise. **(a)** – the number of observations referring to these means are displayed in column SIM of the Cases. **n.s.** – non-significant.

The foreign investors did not weigh the influence of the national institutional network. Thus, every variable presents low scores. This outcome has previously been explained.

As for the inter-entrepreneurial network, it should be emphasised the low number of contacts. Although they influenced the foreign investors' judgement (both absolute and relative), they did not affect the efficient performance of this network's members.

6. CONCLUSION

The network approach was used to study the location of the foreign manufacturing firm in Portugal.

The interviews, which were carried out with the firms' managers, allow to identify the networks' members and to explain their role in attracting the foreign investment.

The results point out the importance of the social network action (friends and entrepreneurs, national and foreign ones), of the intra-entrepreneurial network (suppliers and particularly foreign firms previously established in Portugal), and of the inter-entrepreneurial network (consulting firms and chambers of commerce). It seems worth mentioning that public institutions did play a minor role in the whole process of location (*ICEP* and *IAPMEI*).

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