HUMAN CAPITAL IN THE COMPETITIVE STRATEGY OF MULTINATIONAL COMPANIES IN SPAIN[1]

INTRODUCTION

Human capital has been highlighted in economic literature as a relevant element amongst entreprise assets, it plays an important role in the determination of productivity levels, and hence, of entreprises and the countries competitive power. That role is mediatized by technology, so the interaction between human capital and technological resources demands a balanced development of both.

Now, important changes in the production systems have occurred in the last two decades, which have completely transformed the traditional relations between labour and capital[2] . These changes have taken place at international level, therefore, the eighties have witnessed two fundamental facts: the deep technological change, on the one hand, and the innovations in the organisational methods, on the other.

The introduction of new technologies has a direct effect upon the qualifications required to carry out a job. Therefore, availability of duly qualified manpower for the usage of these technologies

---

[1] I am indebted to professors Mikel Buesa, Vicente Donoso and José Molero for the help they gave me throughout the preparation of this article.

[2] The current model, which has been named *Techno-Economic Paradigm* by some authors, appears as demanding work of a higher qualification and the changes go beyond the merely technological aspect, affecting the many spheres of the enterpreneural organization. In FREEMAN and OLDMAN (1991), the most outstanding features of both productive systems are synthesized, especially in Table 1.2.

becomes a pre-requirement that ensures quality and productivity standards, and access to markets other than the ones offered by them (SENKER and SENKER. 1990). The new methods of organization also reflect the enterprise strategy adopted in relation with labour force. A production system characterized by its flexibility involves a specific personnel policy, where qualification of manpower is a crucial element to carry out the productive process using new technologies. Its repercussions must be considered in two different spheres. First, in the national education systems, where qualifications of a higher level will be required which will serve to shape the labour offer adapted to the needs of the production system. Secondly, in the companies, where an increase in the training activities of the workers will be essential to avoid obsolescence and face the challenge of the new productive conditions.

In short, the productive context created by the use of sophisticated technology demands, amongst other things, a labour factor substantially different from that of previous economic frameworks, essentially characterized by its high contents of qualified work. Moreover, the worldwide relevance of this phenomenom[3] , the growing complexity, the internationalization and speed of change in the economic context make the labour factor be of greater importance in the economic life of the company, along with the unavoidable need of its permanent updating.

The previous statements, which are generally acceptable for all productive models, have certain peculiarities in the Spanish case[4] which, in a synthetic way, can be summarized around two elements. First, the relative lag development of the Spanish economy in industrial development, which is immediatly reflected in its dependence on foreign technologies. Secondly, an educational structure lacking the sufficient flexibility to give an immediate response to the needs required by the

[3] This point, along with others, is exhaustively developed in UNCTC (1988), Chapter III. For a general insight of the growth of the internationalization of production, and the reasons of the change in the world economy, CANTWELL (1990), pp. 91-113 can be consulted.

[4] A detailed study on the specific character of the Spanish situation can be studied in MOLERO, BUESA and FERNANDEZ (1990). Chapters I, III and V.

productive sphere. If we add up the time factor to all the aforesaid, with the advance in the project of European construction, it seems logical to expect greater demands from a more and more competitive market, whose immediate result is the inevitable need of allowing for a highly qualified labour factor.

Amongst the approaches that have been made from the theoretical constructions to point out the function carried out by Human Capital in Economy, we could speak of three extensive categories. First, from a macro-economic standpoint, brought about as a result of the search for explanations of the success of the various countries in international trade. Theoretical frameworks rooted in the classical and neoclassical theories of international trade and expressed as explanatory approaches to Leontief's paradox. Along the same line, another series of works has highlighted the importance of Human Capital for economic growth (SCHULTZ, 1980; LUCAS, 1990; BECKER, MURPHY and TAMURA, 1990).

From the consideration of the firm as a productive unit, it has been insisted on the explanatory capacity of Human Capital for the achievement of micro-economic competition (GUEST, 1987; WERTHER and DAVIS, 1982; YEOMANS, 1989; RHINESMITH et al., 1989). Finally, standing between both theoretical contexts, we find the works of the authors who insert the characteristic elements of the enterprise framework into a macro-economic sphere, by considering the company's activity within a global sphere that is the nation which, in turn, is forced to compete in the international field (BUCLEY and ARTISIEN, 1987; PORTER, 1990; DUNNING, 1993).

Starting from this conceptual framework, this article aims to present the empirical results arisen from the research on the human resources and manpower qualification strategies followed by the subsidiaries of multinational companies established in Spain. To this end the paper has been organized in three sections. The first one attempts to check whether the introduction of technological changes has meant changes in manpower qualification and if so, to detect the labour categories and the organizational spheres within the company where they have taken place.

The second section analyses the existence of training schemes in the companies, by studying the groups of employees they are aimed at. In this part, the main hypothesis used is that training schemes in companies are considered to be response to the requirements demanded by technical change; and a secondary hypothesis is that the training undertaken by companies is a way out to solve the shortcomings found in the supply of Spanish manpower. This last aspect gives way to the third section, where it is studied whether multinational subsidiaries find difficulties to hire qualified manpower in the Spanish market. When such problems are detected, the analysis is extended to the detail of the labour categories in which they have been identified. Finally, a section of conclusions synthesizes the most outstanding outcomes.

Facing the diversity of countries of origin of the investments on Spanish economy[5], and with the purpose of a deeper analysis of the aforesaid aspects, the empirical study is focused on the companies in Spain controlled by German and Dutch capital. This twofold origin of the studied subsidiaries is justified by the relevance of those two groups of capital within the whole of foreign investments on the Spanish economic system[6]. The source of the data used in this article is a survey

---

[5] The presence of foreign capital in the Spanish economy is not a recent phenomenom. Its importance in the first steps of the industrialising process and its permanent leading role throughout time have been widely outlined in various works (MUÑOZ, ROLDAN y SERRANO, 1978; BUESA y MOLERO, 1988; IRANZO, 1991; MARTINEZ SERRANO y MYRO, 1992).

[6] According to data from the Dirección General de Transacciones Exteriores (Economic Secretary) for the period 1962-1988, the average of German investments was 12.15 per cent of the global foreign investment on the Spanish economy. The sizeable amount of direct foreign investment that came to Spain in 1989 and 1990 makes the level of significance of German capital lower on the whole, although it has not experimented any reduction. In any case, by taking long terms, the prevailing feature of these investments is <u>stability</u>. This characteristic leads us to think of an investing activity that is a result of very solid relations with their subsidiaries.

According to the aforesaid statistical source, the data state that Holland's position as a supplier of capital to Spain has changed substantially. In fact, in the second half of the seventies its participation was 6 per cent in relation to the total of foreign capital poured into the Spanish economy, and one decade later, that percentage reached 17 per cent. In other passed to the companies with German and Dutch capital established in Spain, within the framework of two research projects on the performance of the respective multinational firms[7]. The survey was sent to all the companies with Dutch capital and only to the industrial firms with German capital[8]; these facts must be considered at the time of assessing the results of both groups. The survey covered not only the Human Capital aspects but also commercial, technological and productive aspects, although this article offers the most outstanding results of the first one.

The number of valid questionnaries obtained was 23 from the first group, and 113 from the second one, which represents a response rate of 23 and 38.5 % respectively. The significance of the firms of the sample, in relation to the total of subsidiaries from the country of origin established in Spain, is 23.1 % of employment and 36.5 % of sales in the Dutch case. Percentages that reach 65.2 % and 68.1 % amongst the industrial subsidiaries of German origin. The comments from the interviews carried out with company managers of both groups have also been used as a supplement[9].

---

words, Holland has become the main investing foreign country in Spain. However, the specificity of Holland as a mediator in the internacional investment processes makes us state clearly that the actual contribution of capital to Spain is noticeably lower (CARRASCOSA, 1991). In any case, by using the estimations of capital stock abroad regarding Spain, made by NEDERLANDSCHE BANK, and comparing them with the value of the accumulated net foreign investment, we can see that, at the end of the eighties, Dutch investment was 5 per cent of the total foreign capital existing in Spanish economy.

[7] Both projects were realized in collaboration with foreign institutions, FAST Institute of Berlin and the Dutch University of Tilburg. The funding of the projects was by the Volkswagenwerk Fund and the Erasmus Program of the European Community.

[8] It must be taken on account that the preferential location of German investment in Spain takes place in industrial sectors, although the greater weight of the services as investment recipients has been noticeable in the last years.

[9] In the German case, the interviews took place in the first semester of 1990 with companies from the chemical, vehicles and spare parts, and electric and electronic material sectors; a total number of 14 were completed. The 8 interviews with Dutch subsidiaries were carried out in the second trimester of 1991

I. TECHNOLOGICAL CHANGES AND THEIR REPERCUSSIONS ON MANPOWER

The investments made by companies in the last years have had a direct effect upon the labour factor. On the one hand, they have modified the typology of the existing jobs and, on the other hand, they have meant significant alterations in the contents of the tasks assigned to them. Starting from this consideration, this section attempts to analyse whether the technological changes introduced by the multinational companies operating in Spain have affected labour qualification by studying where the modifications have taken place, both in professional categories and organizational areas in the company.

Taking the information in Table 1 as a starting point, the relations between technological changes and the workers' needs of qualification in the subsidiaries of multinationals established in Spain can be observed. The most relevant point is the large number of companies that declare that they have undergone changes in their workers' qualification as a consequence of technological change[10] .

In the German case, where the larger number of companies of the group has allowed to extend the analysis up to a sectorial level, we have been able to see that the phenomenom has been more intense in the more dynamic sectors within the Spanish industrial system[11] , they are also the industrial branches where the biggest part of the German investing flow is located. Basically they

---

with companies from the chemical, electronical, food, and insurance industries and banks.

[10] In the Dutch group, we could observe that nearly three quarters of the companies had introduced automation processes in the last years, those affecting the administration areas exceeded the number of the productive ones. In the latter only half of the companies had automated the processes in recent time.

[11] A detailed analysis of the dynamism of the industrial productive system in Spain can be consulted in MYRO and GANDOY (1993); BUESA and MOLERO (1988).

are firms belonging to Pharmaceutical industry, Manufacture of Electronic Material, Chemicals, Electric Machinery and Material, Metallic Products and Vehicles, both Automobile Building and Manufacture of Vehicle Accesories and Spare Parts.

In the same way, drawing the attention to those sectors where the repercussions of technical change have been very slow or nonexistent, we can see that they are companies belonging to the sectors of Iron and Steel, Publishing, Wood Industry, Glass, Non-ferrous Metals, and Manufacturing of Precision and Optical Instruments, and similars; all of them, except the last, may be included in the group known as traditional industries. In short, the empirical evidence indicates that the greatest repercussion of technological change upon manpower qualification has been suffered by those companies situated in the most active sectors of the Spanish industrial system; this conclusion is not surprising for it is in those sectors where the greatest implementation of technological innovations essential to maintain the growth rate is given.

TABLE 1.- GENERAL CONTEXT OF MULTINATIONAL COMPANIES IN SPAIN IN TERMS OF HUMAN CAPITAL.

	GERMAN	DUTCH
TOTAL COMPANIES	113	23
WITH QUALIFICATION CHANGES	75	17
	66.4%	73.9%
WITH TRAINING PROGRAMMES	79	20
	70.0%	87%
WITH HIRING DIFFICULTIES	52	5
	46.0%	22.0%

SOURCE: Taken from the databases created with information resulting from questionaries passed to Dutch and German companies.

With the object of evaluating the effects that technical changes have had on labour qualification, a typology of workers has been built from a twofold standpoint. On the one hand, in view of professional categories, and on the other, considering the various organizational spheres. In this way we can state exactly to what extent technological innovations have affected the different groups of employees or the company areas.

The company's organizational structure has been subdivided into four areas: Production, Maintenance, Administration and Others[12] . As regards professional categories, three divisions have

[12] With the division used in the survey we did not attempted a thorough examination of all and each of the spheres but to

been taken into account. The first one -Directors- includes all those workers with managerial responsibility jobs and with a higher degree of academic qualification. Under Intermediate Managers all the workers with jobs of medium technical qualification levels and those who carry out tasks of limited responsibility are gathered. The group Other Personnel lists the workers with a lower level of qualification and who can not be included in the former group because of the post they have.

TABLE 2.-

PERCENTAGE DISTRIBUTION OF THE COMPANIES WHICH HAVE UNDERGONE CHANGES IN THE QUALIFICATION OF MANPOWER IN CATEGORIES AND ORGANIZATIONAL AREAS.

	DIRECTORS		INTERMEDIATE MANAGERS		OTHER PERSONNEL	
ORGANIZATIONAL AREAS	G %	D	G %	D	G %	D
Production	44	18	84	35	61	41
Maintenance	25	6	51	23	37	18
Administration	40	41	59	88	33	53
Others	9	18	19	41	19	29

SOURCE: Vid. Table 1

---

cover a large part of the general needs of a company in an operative way. Therefore, for the sake of simplification in the response to the questionnaire, the four aforesaid categories were used, leaving without specification those areas which like marketing, commercialization, finance, etc. have a definite weight on the enterprise strategies for internalisation. The same comment applies to the typology of workers. In any case, we must no forget that the final aim of the article is a general analysis of the strategy of these subsidiaries in terms of human resources as a consequence of the introduction of new technologies.

The results highlight some differences between both groups of subsidiaries (Table 2). Such differences are related to the organizational areas of the companies where the effects of technological innovations are noted with greater strength. Thus, whereas changes have taken place mostly in the productive sphere in the German group, followed at some distance by Administration and Maintenance, the rule is quite the opposite in the Dutch case. Therefore, the most affected area is Administration in the Dutch subsidiaries, whereas Production and Others appear in second place with equal number of responses, and Maintenance becomes the company sphere least affected by technological innovations[13] .

In spite of these differences, an ample coincidence exists between both groups in relation to the workers categories most affected by technological changes, Intermediate Managers and Workers of a lower qualification level being the groups where this effect has been greater. As regards Directors, they appear as recipients of the changes with percentages about half the number of companies in both groups of subsidiaries. Again it is interesting to stress here that this group with a higher qualification has been affected in virtually equal number of companies in the areas of Production and Administration amongst German subsidiaries, whereas for the Dutch group, the responses show Administration Directors to be the most affected by technological change.

The results of the sectorial analysis of the modifications in job qualification confirm the existence of substantial differences among the various industrial branches[14] . Thus, the effect of technological changes upon Directors has been stronger than average in companies belonging to Pharmaceutical

[13] It is essential to remember that only 61 percent of the group of Dutch companies have industrial character; this fact could serve to explain partly the noted difference from the German ones. In any case, the priority given to Administration in the total of responses leads us to think that the effects of technological changes upon Dutch multinational subsidiaries has been felt with greater strength in this area.

[14] The analysis has been carried out in the German subsidiaries, for the low number of Dutch companies did not make the use of a sectorial break up advisable. The same comment can be applied to the point where other matters concernig size are analysed.

Industry, Manufacture of Electric Material, Manufacture of Metal Products, and Manufacture of Machinery and Mechanic Equipments. Intermediate Managers were more affected especially in the cases of Manufacture of Machinery and Electric Material, Chemical Industry, Pharmaceutical Industry, Manufacture of Car Spare Parts, and Transformed Plastics.

Finally, the effect upon the group of Other Personnel appears stronger than average in companies belonging to the areas of Chemical Industry, Ceramic Products, Construction of Automobile Vehicles, Manufacture of Electrical Material, and Manufacture of Car Accesories and Equipment. In any case, the available information does not permit to build a reasonable explanation to such differences, and we can only venture to suggest that the degree of technical complexity as well as the specific situation of each of them are two of the reasons for the fact that the repercussions of technical change have a stronger effect upon some of the categories.

On the other hand, breaking up the facts in terms of the size, (Table 3), we can note that the total of the companies on the biggest size level have been affected by the changes in the qualification of their labour force. In a parallel way, the highest percentage of companies where variations in this variable have not occurred corresponds to those smaller in size, particularly to those with a staff of less than 100 workers. Therefore, the existence of a relationship between the company size and the effect of technological changes in manpower qualification can be pointed out, although not in a strictly lineal way.

(TABLE 3)

By combinig company size with professional categories, some specific points can serve to complete what has just been presented. First, the professional group with a higher qualification is a little more relevant in the smaller size strata than in the rest, which proves that the group of Directors is more affected by technological changes in small companies than in big ones[15]. On the other hand,

[15] Once more, the specific points deduced from the personal interviews confirmed the results presented here in a general sense. Thus, by choosing the most representative cases of companies with less than 100 workers, it was strengthened that technological changes had brought about higher demands in the qualification of better prepared workers, especially Directors,

Intermediate Managers are the professional group most affected by changes, this fact being especially relevant in companies whose total number of workers ranges from 250 to 1,000. Finally, the least qualified professional categories become more representative as the company size is bigger[16] .

All the aforesaid leads us to state that the size variable contains a differenciating germ in the repercussions that technical innovations have upon the qualification of the various professional categories, independently from these categories. Thus, in small companies, the degree of technical complexity introduced is possibly lower, and only the best qualified groups are affected by it, whereas technological change is deeper in large companies, affecting essentially the requirements of the professional groups with lower qualification.

II.- TRAINING PROGRAMMES IN COMPANIES

The ability to exploit technological innovations in a competitive way is closely related to the degree of labour force qualification. Therefore, training schemes in companies are not only a response to the new qualification requirements needed for the use of new technologies, but also a need imposed by the attainment of higher levels of competition.

Therefore, the aim is to analyse whether the training programmes undertaken by companies with foreign participation are a reactive method to the technical innovations introduced, attemptig to consolidate or foster their competition levels, not only from a national standpoint but from an

---

stressing that one of the most recurrent problems in their organization was the knowledge of the German language amongst the aforesaid professionals.

[16] This feature became the common denominator in all cases interviewed whose staff was over 1,000 workers, with a clear effect of this labour group upon the production and maintenance areas within the sector of construction of automobile vehicles.

international and especially European prospective, where a good part of their economic activity develops[17]

To this respect, one first question to consider is whether the subsidiaries have tackled efficiently the carrying out of training programmes for their workers. The results show a high percentage of companies that say they carry out training programmes. In fact, both in the group of German subsidiaries (70 per cent), and in the Dutch group (87 per cent), the accomplishment of training programmes is usual practice within their strategies (Table 1).

If we compare the previous figures with the ones related to the effect of technological change upon the requirements of manpower qualification, it is evident that the line followed by them in terms of preparation of human capital goes beyond the mere circumstancial coverage of the needs brought about by technological innovations and it is in agreement with an enterpreneural philosophy[18], where worker's training is a strategic variable, determinant of competition, THUROW (1992), PORTER (1990), DALY et al. (1985) have remarked this from different standpoints in their works.

In short, the general trend of the multinational firms present in Spain is the accomplishment of training and qualifying programmes for their manpower, going beyond a mere response to the demands derived from the use of new production and organization techniques. Therefore, it seems obvious that these firms have a dynamic personnel strategy in terms of training; they carry out

[17] We should not forget that training is a strategic option taken by organisations to make up for the possible difficulties found in the external offer of specialised work. For this reason the training issue will be raised in the next section. For a greater detailed study, TAYLOR (1989) Chapter 7 can be consulted.

[18] In the report by COOPERS & LYBRAND ASSOCIATES (1985) evidence on this matter can be found for German companies. A comparative study is offered on the repercussion of the workers' training programmes at productivity levels between Germany and England, with very different approaches and results, clearly favourable for the first.
Likewise, the large amount of human capital in Germany and its competitive advantage in international trade appear openly interrelated in JUHL's paper (1985).

activities aimed at the consolidation of a labour force adequately trained to solve not only the problems that may arise at short term from the use of new technologies, but also seeking the strengthening of competition at long term through the supply of a highly qualified labour factor[19] .

An interesting consideration when analysing the existence of training projects in companies is to know the group of workers they are aimed at. This procedure permits us to evaluate the workers' strata on which the company strategy insists (Table 4).

[19] To this respect, the information deduced from the interviews leads us to state that, in nearly the whole of the cases studied, the worker training schemes are designed within this dynamic conception, and in a company of manufacture of electric machinery and material belonging to one of the German largest industrial groups we were told that the Spanish subsidiary operated according to the group's philosophy concerning their personnel training, which consisted in the strengthening of a policy of personnel adapted to international criteria in order to face the challenges of increasing market internationalisation and the formation of the United European Market.

TABLE 4 TYPOLOGY OF THE PERSONNEL THAT RECEIVES TRAINING PROGRAMMES IN THE COMPANY

TYPE OF PERSONNEL	German Companies	Dutch Companies	G %	D
DIRECTORS AND ENGINEERS	14	4	18	20
INTERMEDIATE MANAGERS	36	9	46	45
OTHER PERSONNEL	48	8	61	40
ALL LEVELS	18	8	23	40
UNDETERMINED	1	-	1	-

SOURCE: Vid. Table 1

NOTE: The total sum of the percentage columns is over 100, this is due to the fact that each company can carry out more than one training programme for the different groups of workers.

As regards to the categories receiving the training programmes, the profile of both groups is slightly different. Thus, the least qualified groups are the main recipients in German industrial companies; since they are the groups with greatest difficulty to become adapted to the technical change, the effort of the company must be addressed to them in order to overcome the initial difficulties of working with advanced techniques. In some of the interviews, this shortcoming of the less qualified workers to use new technologies was pointed out, due to the average advanced age of the Spanish staffs and the high degree of permanence in the company, which was an added difficulty to the use of innovating production and organization techniques. On the other side, Dutch subsidiaries present a more uniform range of the categories that receive training programmes, although showing a slight superiority of Intermediate Managers.

In short, the previous results seem to confirm the hypothesis that the less qualified categories find the greatest difficulties to become adapted to the work methods required by the use of advanced technologies in spite of the noticeable differences in both groups of multinationals, and therefore, companies direct their efforts to overcome such shortcomings through the implementation of training schemes for their manpower. However, companies do not neglect the education of the level of better qualified workers[20] .

It is also important to stress that not a small number of the programs extend to workers of all levels, this is done by 23 percent of the German subsidiaries and in a larger extent by the Dutch ones; these facts allow us to support and reinforce the abovementioned comments[21] .

Comparing these results with the ones brought about by the survey which was carried out under the direction of Cranfield School of Management and Price Waterhouse throughout 1989, with a sample of companies in France, Spain, Sweden, Grat Britain and Germany, where a broad range of themes related to Human Resources is analysed[22] , additional considerations can be established. In the aforesaid work is pointed out, in first place, the unanimous acceptance by companies of all countries of the central role of the Human Resources variable; according to the companies, this is so because it is one of the most influencing elements for the success of their activity.

Another common feature to the companies analysed in the abovementioned survey is the increase of their expenditure on training in the last years[23] . The need for higher expenses on manpower trai-

---

[20] The experiences derived from the personal interviews permit us to specify that, in several cases, we can confirm that the formative programmes for directors and senior workers were carried out within an international framework, with longer or shorter-lasting stays in the head office or other European subsidiaries of the group as a means of learning.

[21] In nearly half of the interviewed cases, it was possible to detect a training strategy aimed at all staff levels, carrying out a policy of continuing manpower re-training.

[22] The importance of this survey is due, amongst other factors, to the international projection of its comparative basis, without leaving aside the moment in time it was carried out, for it was on the eve of the formation of the United European Market. For specific details PRICE WATERHOUSE (1990), Chapter IV can be consulted.

[23] According to the results of our survey, as regards the Dutch group, it is possible to say that in 95 percent of the

ning is given, to a large extent, by the shortage of qualified work observed in nearly all countries, even though the circumstances of each of them vary considerably.

The Spanish case shares the increase of the expenses made by the companies in the last years with the rest of the countries, although there is a substantial difference regarding the groups that receive the training[24] . Thus, The biggest increases of training expenses have occurred in the categories of Technicians and Professionals, recipients of the biggest efforts made by 66 percent of the companies, whereas 46 percent of the companies confirm to have spent less on the group of unqualified workers. Likewise, a lower effect upon training of boards of directors can be observed in Spain in comparison with other countries, which serves to reinforce the fact that Spanish companies direct their training programmes to the groups of technicians and intermediate managers (this category can be assimilated to the group of professionals without higher qualification), and to a lesser extent but significantly, to the categories with a lower qualification level.

Comparing the general trend for Spanish companies presented by the aforesaid international report with what has been observed in the specific cases of the subsidiaries analysed herein, and taking into account the difficulties of the comparison derived from the different construction of the categories or companies making up the sample[25] , the following aspects can be pointed out: In general, the multinational subsidiaries share with Spanish companies the stress on the training of the workers with intermediate qualification, even though its effect upon the group of lower preparation is a lot

cases the training expenses represent a little less than 5 percent of their total sales.

[24] The data are deduced from Tables 4.1 and 4.2, page 34 of the aforementioned report.

[25] The fact that all the companies that make up the sample of the Cranfield & Price Waterhouse report have more than 200 employees must be mentioned amongst their differenciating features, which means a bias towards the inclusion of large companies. Besides, they are companies belonging to all the fields of economic activity, taking into account both private and public concerns, (see Methodology pp. 47 and following).

bigger, especially amongst the German companies, than the one presented by the Spanish group as a whole.

An explanation of this divergence can be found in the characteristic of the industrial investment of German capital in Spain, located mainly in branches like chemicals, metal-mechanics, cars, and electric products, where the effect of technical change has brought about bigger needs of preparation within the group of less qualified workers; besides, the data from the empirical analysis are based exclusively on the universe of German industrial subsidiary companies.

The most noticeable divergence lies on the fact that training appears as a response to a problem of insufficience in the supply of qualified manpower in the Spanish case, whereas in the Dutch and German subsidiaries the training programmes are the overcoming way of the bigger demands for workers' qualification required by the technological innovations introduced in the production processes.

The consideration from the sectorial side shows some differences among industries when selecting the groups of workers the training is aimed at. For instance, the Chemical sector directs its trainig programmes to the two extremes, the one with higher and the one with lower labour qualification, whereas others like Car Components and Accesories concentrates essencially on the category with lower qualification. Other sectors like Car Construction or Pharmaceutical Industry extend their programs to all categories.

If we introduce the size variable into the consideration of the theme, the most outstanding element is the existence of a direct relation between both questions (Table 3). Thus, the companies with more than 1000 workers carry out proyects in 91 percent of the cases whereas the companies with less than 100 employees do it only in 58 percent of the cases. Therefore, it seems clear that training is a generalised practice in bigger companies, and its importance grows along with the growth of the company size[26] .

[26] This result coincides with what has been stated for vocational training and Spanish economy as a whole, in the

By relating this result to the one obtained with regard to the connexion between the company size and the changes in manpower qualification brought about by the use of new techniques, some supplementary notes may become clear. Thus, for the group of companies with a smaller number of workers, the training schemes seem to respond only to the requirements demanded by technical changes; they are, in all cases, training programmes meant to tackle new demands in the levels of manpower qualification. On the contrary, in companies of bigger size, the efforts made for training have a greater scope than the mere response to the demands originated by the use of new technologies.

III.- DIFFICULTIES WITH THE SUPPLY OF SPECIALISED MANPOWER IN SPAIN.

The relation between the education system and the needs of the production system has been the object of concern in the last years, which has affected the preparation of a large amount of specialised research works[27]. It seems adequate within this context a study in depth on the perception that the two groups of foreign multinationals studied here have about the capacity of the Spanish supply of specialised work to meet the requirements of their economic activity.

One first aspect to consider is that less than half of the German subsidiaries have answered that they had found difficulties in the hiring of specialised work in Spain, and only 22 percent of the Dutch subsidiaries (Table 1). This fact makes evident that the disagreement between the supply and the demand of qualified work, even when it exists, does not seem to be very big, and the Spanish

---

Camaras Oficiales de Comercio, Industria y Navegación de España report (1992). Vid Chapter II.

[27] Amongst the works that dealt with these aspects, the following can be mentioned: those by the CAMARAS DE COMERCIO, INDUSTRIA Y NAVEGACION DE ESPAÑA (1992); MODREGO (1993). A detailed presentation of the significance of debate in the Spanish economic life can be consulted in MOLERO, BUESA y FERNANDEZ (1990). Chapter II.

education system as a whole is not so inadequate to supply the required qualifications for the productive needs, even though certain shortcomings are perceived that must be overcome.

From a sectorial standpoint, the biggest number of difficulties has been detected in the electrical and metal-mechanical branches[28] . This is due, in the first place, to the technological complexity of these sectors, and to the processes of modernisation they have undergone in the last years. The companies belonging to these industries say they have hiring problems within the Spanish supply in more than half of the cases[29] .

On the contrary, in other sectors like Car Building and Manufacturing of Equipments and Components, most companies confirm they find not problems to recruit qualified personnel in the Spanish supply[30] . We must point out equally the case of the Pharmaceutical Industry in which all

---

[28] In the Cámaras del Comercio report (1992) about vocational training, its clear concentration on a small number of branches and specialities is made evident when pointing out the most compelling needs of the companies. Therefore, the results brought about by our empirical analysis are in agreement with the general trend observed for Spain. Vid op. cit. Table II.1.

[29] All the interviewed companies belonging to electrical branches, with one exception, said they had problems to recruit specialised personnel in the Spanish market. In most cases, the reasons they gave were the insufficient supply of specialised personnel in Spain to tackle the continuing automation and technological complexity processes occurring in the productive methods of these sectors. Even one of them, which is abbandonig the productive jobs to work only on marketing tasks for the production of the head company and other subsidiaries of the group, expressed the problem the company has to recruit very specialised technical personnel for their commercial department, essential for the re-orientation of activities which are taking place in the Spanish subsidiary.

[30] The four cases specifically studied in these industrial branches confirmed unanimously that, as a general rule, they did not find it difficult to hire specialised personnel in the Spanish supply, even though they perceived some concrete difficulties in some specific areas (finance, very specialised technical areas, etc.). As an individual case, we were informed by a big company of that sector about the good preparation of Spanish labour, to such extent that they had included Spanish

the companies of the sample say they do not have any problems to recruit specialised manpower. An identical situation is given in the Textile Industry. Finally, the affirmative answers were slightly above the general average in the Chemical Industry, which was confirmed in the interviews in depth carried out in four of these companies[31] .

As regards labour categories, the two groups of multinational studied agree to point out that the greatest difficulties are found in the spheres of less qualification (Table 5). The assesment carried out by both goups amongst the employees with higher qualification varies considerably. German companies do not seem to find serious problems in the Spanish market, whereas the problems are more important in the Dutch case.

Now, the small number of Dutch companies that confirmed they had experienced difficulties to hire specialised manpower in the Spanish market makes us be careful to consider these results. In any case, it does not seem risky to state that, in general, not an excessive number of problems to recruit qualified manpower in the Spanish market are observed amongst the surveyed subsidiaries, and that, when difficulties exist, they are more noticeable in the group of workers with intermediate and low qualification levels.

TABLE 5.- TYPOLOGY OF THE PERSONNEL WHERE DIFFICULTIES ARE FOUND IN THE SPANISH SUPPLY.

---

workers in some specific programmes of international support in some subsidiaries of the group.

[31] In one of the companies it was said that the basic training of the Spanish worker was good in general, and that they had found difficulties in the Spanish supply only for very specific problems. On the contrary, the other three companies answered, to a larger or lesser extent, that they had experienced some problems to get specialists in the Spanish market, especially regarding technical personnel. In any case, these companies made clear that such difficulties did not mean a limmitation for future expansion plans in Spain, for the assesment price-quality of the work is, in general, one of the best considered elements.

TYPE OF PERSONNEL	German Companies	Dutch Companies	G %	D
DIRECTORS AND ENGINEERS	13	2	25	40
INTERMEDIATE MANAGERS	24	2	46	40
OTHER PERSONNEL	33	3	64	60
ALL LEVELS	1	-	2	-
UNDETERMINED	2	-	4	-

SOURCE: Vid. Table 1

NOTE: The total sum of the percentage columns is over 100, due to the fact that one company can find difficulties in more than one personnel category.

Both groups coincided in remarking the lack of personnel with some command of foreign languages in the Spanish supply. This aspect was stressed in the case of the German subsidiaries facing the small number of workers with some command of German. Since the use of foreign languages is accepted as a key tool to tackle the challenges of a growing competition (HIDALGO, 1994), there is an area left in need of attention by the educational policy.

From a sectorial standpoint, we can see that the problems of recruitment of highly qualified personnel are more relevant in the sectors of Chemical and Construction of Machinery and Electrical Materials[32] . Also, the greatest gaps to hire Intermediate Managers are detected in the

[32] This result is also deducted from the information obtained from the interviews. In nearly all the companies belonging to the sector of construction of machinery and electrical materials, we could confirm with their directors that production and productivity have increased notably as a consequence of the greater rate of automation introduced in the companies, although it has required highly qualified manpower, which was sometimes very difficult to recruit in the Spanish market, mostly for the senior technical posts. In the interviews with the chemical companies, it was stated that the greatest recruiting problems in the Spanish market appeared for the technical posts of the

sectors of Construction of Machinery and Mechanical Equipment, Manufacturing of Electronical Material and Manufacturing of Equipment, Car Accesories and Spare Parts. Finally, the jobs of lowest qualification present recruitment problems in a wide range of sectors, but mainly in Cars, both manufacturing and auxiliary services, Construction of Machinery and Mechanical Equipment, as well as Manufacturing of Metallic Products.

By relating the possible difficulties that companies have to hire specialised manpower in the Spanish market to their size, it is possible to analyse whether this variable is a differenciating element, both regarding the perceived difficulties and the categories where they take place. Thus, the companies' difficulties to have specialised manpower are bigger in large companies. Nearly 73 percent of the firms with more than 1000 workers declare they have hiring problems in the Spanish supply of specialised work, whereas only 42 percent of the small ones answer affirmatively to a similar exposition. (Table 3).

On the other hand, the noticeable differences make evident that the degree of complexity in the productions of big organisations requires a higher qualification of their work factor and, therefore, the shortcomings of the Spanish market to meet the specific demands of these organisations are bigger.

By establishing a connection between the size of the companies with the typology of the workers where recruitment problems are perceived, the previous comments can be completed with some notes. For instance, the difficulties of higher qualified personnel are more obvious in big companies[33] . Shortcomings in the Spanish work supply are more evident for big companies in the

---

areas of project engineering and technical personnel in general; they stressed that the knowledge of the German language made recruitment difficult to some extent.

[33] It is interesting to point out that the director of a company in the electronic sector with less than 100 workers declared in the interview that the difficulty to find qualified technicians, mainly engineers, was very big for a small company in the Spanish market, since problems caused by the size for the recruitment of this type of workers and by the stronger

categories of Directors and Intermediate Managers. Likewise, smaller companies find the biggest problems in the recruitment of personnel of lower rank and Intermediate Managers.

IV.- CONCLUSIONS

The growing degree of internationalisation of economies, the progressive increase of competition, and the evident technological change can serve as characteristical notes of the worldwide economic background in the nineties'. In this context, and as a universally accepted fact, human capital becomes an essential resource for enterprise competition which extends to each country.

From this starting point, and in the Spanish scope, the analysis of some of the central cores around which an enterprising strategy in terms of human capital is articulated was considered relevant. For this reason, and due to the strong imbrication of the foreign company in the Spanish economic substratum, the analysis focused on the groups of German and Dutch subsidiaries that operate in our country.

In general, the empirical evidence brought out some interesting facts. First, the technological innovations introduced by companies in the eighties' involved substancial changes in work methods that brought about new requirements in workers' qualification; those needs were more compelling amongst the workers with lower levels of professional qualifications.

Secondly, less than half the companies studied have found difficulties to recruit specialised manpower in the Spanish market, difficulties that were bigger amongst employees with lower qualifications. This fact reveals certain weaknesses in the Spanish education system which must be overcome. To this purpose, it seems advisable to think of a design of an educational project according to the demands of technological change, which is able to provide workers with a broader and more polivalent formation. These aspects are directly connected with the need of the educa-

---

competition exerted by the big companies of the same sector were added up to the limmited Spanish supply.

tional policy to tackle an intense reform of secondary education without delay, especially of vocational education, in order to integrate it fully and efficiently in the national productive system.

Finally, training is taking shape as a key element for the defence of three flanks: the demands of qualification brought about by technological change; the overcoming of the existing gaps in the Spanish specialised supply, and the response to the challenge of an ever increasing competition. Consequently, the hypothesis presented in the beginning of the article seems to consolidate, which stated that the training schemes in the analysed subsidiaries are established to tackle both the changes in qualification caused by technological innovations and, to a lower degree, to overcome some of the shortcomings which exist in the Spanish market for some specialised jobs. However, again through the explanatory information obtained from the interviews, we can state that training programs are adapted to specific posts in most situations; this training line is coincident with the general trend observed in the whole of the Spanish market.

ABSTRACT

By accepting the relevance of human resources in the determination of the levels of productivity in the company, in this article some aspects of enterprising strategy concerning human capital are tackled, studied in two groups of multinational firms: German and Dutch; both groups have an important presence in the Spanish economic framework. The outcome underlines that the technological changes of the last years have affected significantly the qualification levels of manpower in general. Training schemes appear as a company strategic response to tackle the requirements brought about by technological change, on the one hand, and to fill the gaps detected in the recruitment of specialised work in the Spanish supply, on the other. Evidence points towards the jobs that need less preparation as the most affected ones by the introduction of technological innovations.

REFERENCES

BECKER, G; MURPHY, K. y TAMURA, R. (1990): "Human Capital, Fertility and Economic Growth" In Journal of Political Economy. Vol. 98, num 5.

BUCKLEY, P. y ARTISIEN, P. (1987): North-South Direct Investment in the European Communities: The Employment Impact of Direct Investment by British, French and German Multinationals in Greece, Portugal and Spain. Macmillan Press. London.

BUESA, M. y MOLERO, J. (1988): Estructura Industrial de España. Fondo de Cultura Económica. Madrid.

BUESA, M. y MOLERO, J. (1993): Estrategias de las Empresas de Capital Extranjero en España. El caso de las filiales de multinacionales holandesas. Instituto de Análisis Industrial y Financiero. Complutense University. Mimeo.

BUESA, M.; MOLERO, J. y FERNANDEZ, J. (1990): "Requerimientos de formación en puestos de trabajo vinculados al uso o generación de tecnologías innovadoras" in Revista de Educación, núm. 293. Septiembre-Diciembre.

CAMARAS DE COMERCIO, INDUSTRIA Y NAVEGACION DE ESPAÑA (1992): La Formación Profesional en el Nuevo Contexto Europeo. Madrid.

CANTWELL, J. (1990): "The growing internationalization of industry: a comparison of the changing structure of company activity in the major industrialized countries" in WEBSTER, A. y DUNNING, J. (Eds): Structural Change in the World Economy. Routledge. London.

CARRASCOSA, A. (1991): "Notas sobre el origen geográfico de la inversión extranjera directa en España" in Revista de Economía, num. 9.

CASADO, M. (1992): Las Estrategias de las Empresas Multinacionales en España dentro del Nuevo Espacio Económico Europeo: el caso de las filiales alemanas". Ph.D. dissertation. Faculty of Economics. Complutense University. Madrid.

COOPERS & LYBRAND ASSOCIATES (1985): A Challenge to Complacency: Changing Attitudes to Training. A report to the Manpower Services Commission and the National Economic Development Office. Coopers & Lybrand associates. November. London.

DALY, A.; HITCHENS, D. y WAGNER, K. (1985): "Productivity, machinery and skills in a sample of British and German manufacturing plants", in National Institute Economic Review. Vol. III. February.

DUNNING, J. (1993): The Globalization of Business. Routledge. London.

THE ECONOMIST PUBLICATIONS (1990/1991): "Multinational management strategies" in Multinational Business, num. 4.

FREEMAN, C. y OLDHAM, G. (1991): "Beyond the Single Market" en FREEMAN, C.; SHARP, M. y WALKER, W. (Eds.): Technology and the Future of Europe. Pinter Publishers. London.

GUEST, D. (1987): "Human resource management and industrial relations" en Journal of Management Studies. Vol. 24. num.5.

HIDALGO, A. (1994): "La formación como factor estratégico de la competitividad en Europa" in Boletín ICE, num. 2403. Madrid.

H.M.S.O. (1989): Training in Britain. A Study of Funding, Activity, and Attitudes. The Main Report. England.

THE INDUSTRIAL SOCIETY (1985): A Survey of Training Costs. The Industrial Society, num. 1. London.

IRANZO, S. (1991): "Inversión extranjera directa: una estimación de la aportación real y financiera de las empresas extranjeras en España" in Información Comercial Española, nums. 696-697. Agoust.September.

JUHL, P. (1985): "West Germany's participation in international trade, investment and technology transfer" en DUNNING, J. (Ed.): Multinational Enterprises, Economic Structure and International Competitiveness. John Wiley & Sons. Chichester.

LUCAS, J. (1990): "Why doesn't capital flow from rich to poor countries?" in American Economic Review, vol. 80. 2. May.

MARTINEZ SERRANO, J. y MYRO, R. (1992): "La penetración del capital extranjero en la industria española" in Moneda y Crédito, num. 194.

MODREGO, A. (1993): "Innovación tecnológica, competitividad y formación de recursos humanos" in CIRCULO DE EMPRESARIOS: Política Económica y las Reformas Estructurales de la Economía Española. Madrid.

MOLERO, J.; BUESA, M. y FERNANDEZ, J. (1990): Demandas del Sistema Productivo Español y Adaptación de la Oferta Educativa. Centro de Publicaciones del Ministerio de Educación y Ciencia. CIDE. Madrid.

MUÑOZ, J.; ROLDAN, S. y SERRANO, A.: La Internacionalización del Capital en España. Edicusa. Madrid.

MYRO, R. y GANDOY, R. (1993): "Sector Industrial" in GARCIA DELGADO (dir): Lecciones de Economía Española. Editorial Civitas. Madrid.

PORTER, M. (1990): The Competitive Advantage of Nations. Macmillan Press. London.

PRICE WATERHOUSE (1990): The Price Waterhouse Cranfield Project on International Strategic Human Resource Management. Price Waterhouse. London.

RHINESMITH, H.; WILLIAMSON, J.; EHLEN, D. y MAXWELL, D. (1989): "Developing leaders for the global enterprise" en Training and Development Journal. April.

SCHULTZ, T. (1980): "Nobel Lecture: The Economics of being poor" in Journal of Political Economy. August.

SENKER, P. y BRADY, T. (1989): "Corporate strategy: skills, education and training" in DODGSON, M. (Ed.): Technology Strategy and the Firm: Management and Public Policy. Longman Group. London.

SENKER, J. y SENKER, P. (1990): Technical Change in the 1990's: Implications for Skills, Training and Employment. SPRU. Paper. February.

TAYLOR, D. (1989): "Training" in MOLANDER, C. (Ed.): Human Resource Management. Chartwell-Bratt. Sweden.

THUROW, L. (1992): La Guerra del Siglo XXI. Javier Vergara Editor. Buenos Aires.

TRAINING & DEVELOPMENT JOURNAL (1990): May. August and June 1989. Published by American Society for Training and Development.

UNITED NATIONS CENTRE ON TRANSNATIONAL CORPORATIONS (1988): Transnational Corporations in World Development. Trends and Prospects. United Nations. New York.

WERTHER, W. y DAVIS, K. (1982): Personnel Management and Human Resources. MacGraw-Hill. England.

YEOMANS, (1989): "Building competitiveness through HRD renewal" en Training & Development Journal. October.