

AREA: LEARNING (User Requirements & Training Needs)

TITLE: NEW TECHNOLOGIES AND SKILLS REQUIREMENTS IN THE HOSPITALITY SECTOR IN ANDALUSIA (SPAIN)

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Abstract: In this work¹ we have applied the Delphi Method to the study of the current situation and future perspectives concerning the impact of the technological change in the qualification needs of the Andalusian tourism sector workers, taking as a point of reference the subsector of the hospitality. An amount of 50 experts in the matter have been selected, consisting of owners of tourist establishments and/or enterprises, professors and researchers coming from the academic scope, representatives of entrepreneurs associations and trade unions as well as politicians responsible for the tourism area. All of the consulted experts develop their professional activity in Andalusia. With all of them personal interviews have been supported in depth, on the base of a questionnaire which had been already used in other tourist subsectors by Ortega, Marchante and Sánchez Ollero (2001a and 2001b). The obtained results emphasize the growing importance of the new technologies in the sector, although its impact show remarkable differences depending of the kind of enterprise and of the temporary space considered.

Key words: Delphi, new technologies, qualifications, tourism, Hotel and catering business, Andalusia.

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Precedents and current state of the matter

As a great number of official as well as private studies and statistics have already shown, the tourism industry, and particularly the sector of the hospitality, is one of the main sectors generating economic activity in Spain. The information given by the Tourism Satellite Account points out that tourism generated 12,1% of the gross national product in 1999. In only three years the tourism weight in the GNP has been increased in one percent. Concerning employment, the hospitality gave work in 2001 to an amount of 1,463,813 people, which means 3.3% of increase compared with the previous year. Of these workers, 49% of them worked in catering trade and 12.8% in hotels and other lodging establishments.

From the total amount of the workers doing their job in the tourism industry typical activities, 13% of them worked in Andalusia that year.² Due to its importance, as Balaguer and Cantavella-Jordá (2002, pp. 877-878) point out, the future evolution of this industry will be one of the key topics concerning growth and development of the region. A priori, the evolution is conditioned by some important elements. On the one hand, the necessary competitiveness' improvement caused by the membership of Spain to the Eurozone and the price competition which will be brought. On the other hand, the horizontal and vertical concentration processes which are being lived by the whole tourism industry as well as the strategies of the companies oriented to the growth in their business level as competitiveness strategy. Finally, the increased use of technology in the production processes and the extent of use of the new information technologies, which are at the same time a source of advantages and threats in an extremely dynamic environment.

Focusing on this last aspect and considering the whole Spanish Economy, recent research works have pointed out the lack of investigators with skills in the use of these new technologies. In this way, Arias (2002, pp. 7) estimates that 2003 will be a deficit of 107,100 people with knowledge concerning technologies related to the electronic commerce and that this deficit, related to the management of these technologies will be of 110,138 people. Concerning the **TIC** professionals, this author estimates in 14.22% the

² Information source: www.iet.tourspain.es

working places that will remain without covering this year, number that rises up to 28.53 % in professionals in the area of the e-business. In this area Andalusia is the second to last of the autonomous Spanish communities as for the number of companies of retailer trade which uses the electronic commerce, 3.9 %, only ahead of Melilla; In the set of the companies of the region, 10.5 % uses the electronic commerce while the 1.2 % of the population buys through Internet, which places Andalusia in both cases lightly under the national average (López, 2002, pp. 22-23). Regarding the hotel and catering business and according to the information of the Annual Survey of Services of the National Statistics Institute, in Spain (INE), 34.5 % of the lodging companies use Internet, 31.5 % have got e-mail and 19 % can make electronic data transmission. These percents, although they are high if we compare them with some of other sectors of the national economy, they are among 40 and 50 % lower than those registered in the Travel Agencies³.

Chart 1 Repercussions of the technological innovations in the processes and the occupations

Technological innovation	Processes	Occupations
Integrated computerized management	Computer applications related to clients' control, suppliers' relationship, etc.	- Manager - Responsible for buys - Responsible for store - Chief of reception - Receptionists - Maître - Operatives - Administrative Assistant/Accountant
Telematic systems	Interconnection by means of the use of telematic services (video conference, e-mail with other different centres, suppliers and clients). Internet applied to the commercial management, advertising and marketing	- Manager - Sales manager - Responsible for store - Business manager - Sales Manager - Person in charge - Marketing manager
Systems of integrated corporate management	Computer system with software that has got Intranet as support, which allows it to connect between themselves the different establishments belonging to the same corporation.	- Manager - Responsible for store - Administration Chief - Assistants

³ Information obtained in www.ine.es

Software	Update of operating systems and ofimatic applications. Database Systems	- Administration Manager - Administrative Assistants - Responsible for departments - Administrative Assistants
Nets of communication	Electronic Cash Registers for lodging and catering industry. Terminals of electronic purse	- People in charge - Waiters - Cooks - Cashiers - Receptionists
Electronics of consumption	Equipment for kitchen and new ways of sale	- Cooks - Kitchen Assistant - Logistic Responsible - Technical personnel of maintenance
Telephonic digital switchboard	Management of the telephonic movement of the rooms. Processes' automation (alarm clock, billing, etc.)	- Phone Operator - Chief of Reception - Receptionist

Source: Information on the employment market. INEM, 1999.

But not only in these specialized jobs have the new technologies an effect. In the own organizational environment of the companies deep innovations have taken place in the last years. The reasons that have led to the companies to introduce technological innovations have its origin in the pressure of the market and in the defence of the current positions. The way of answering to these pressures is the improvement in the quality of the service (INEM, 1999). The technological innovations fulfilled in the last three years have affected and they will continue affecting the processes of work and occupations of this branch of activity, as it is shown in Chart 1.

In this general panorama, in what situation is the Andalusian lodging and catering sector located?; does it count with skilled workers in the use of the new technologies?; what for an evolution is scheduled in the future?. The aim of this work consists of trying to give response to these questions by means of the study of the current situation and future perspectives of the introduction of the new technologies in the Andalusian lodging and catering sector, from the scope of the impact that these have on the needs of the workers' skills.

Methodology.

The research method consists in a variant of the Delphi⁴ method. This method has been developed from the 50s and it consists in building an experts' panel to which the opinions about topics of their speciality are asked. These opinions are obtained in different rounds of questions, which are made in many cases by post and in others by means of the accomplishment of depth personal interviews (Garrod and Fyall, 2000, pp. 687). The development of the new technologies of communication has got an influence in this method. Nowadays the Delphi Method is also practised by means of the use of the e-mail and the video conferences (Smith, 1995). In the tourist sector they have been numerous the investigators who have used this method in their studies: it has been used with profusion to evaluate the future evolution of the tourist markets [Kaynak and Macaulay (1984); Liu (1988); Yong, Keng and Leng (1989); Moeller and Shafer (1994); Tideswell, Mules and Faulkner (2001)]; to analyze the keys in the management of cultural tourism [Garrod and Fyall (2000)] or the keys of success of travel agencies [Lopez-Martin and Veciana (2001)] or of tourist destinations [Camisón (1999)]; in the analysis of the needs of skills in the different tourist subsectors [Ortega, Marchante and Sánchez-Ollero (2001a and 2001b); to predict the consequences of political decisions on the industry [Lloyd, La Lopa and Braunlich (2000)]; for the development of indicators of sustainable tourism [Miller (2001)] or in the analysis of the environmental impact of tourism [Green, Hunter and Moore (1990b); Puczkó and Rátz (2000)].

In order to do our work we achieved to have the collaboration of a group of experts in tourism that in that moment were doing their work in Andalusia. The work's method development was carried out in two rounds: in the first one 6 persons took part and 50 of them in the second and last one. As López-Martín and Veciana say (2001, pp. 22) it is possible to assume that the experts' number is acceptable⁵ considering that the margin

⁴ Some authors, as for example López - Martín and Veciana (2001, pp. 9-10), they consider the denomination Delfos to be more correct in Spanish, since the english term for this method (delphi) refers to the famous oracle.

⁵ López - Martín and Veciana (2001) counted with the participation of 22 experts. In FORCEM's study (1997) fulfilled in the national area only 10 experts participated in it.

suggested for the good use of the method is from 10 to 30 and in some cases it does not overcome the 5-6. This study was carried out from September to December, 2001.

In the first round there was requested to the experts who worked in the panel to indicate, on the base of a questionnaire already used by Ortega, Marchante and Sánchez-Ollero (2001a and 2001b), the most relevant elements that have effect on the topic object of our work. As a result of this work a definitive questionnaire was obtained, consisting of 13 key questions, (four of them of closed questions and nine of them opened questions) distributed in four paragraphs: Productive and organisational environment of the companies and trends of the markets, Current skills of the workers, Training practises in the companies and training emergent needs. In all the cases hotels and the restaurants were studied in a separated way.

In the second round the experts were requested to do an evaluation and to answer to the raised questions. In the closed questions, the participants at the panel had to value from 0 to 5 a series of factors considered as relevant, understanding as value 5 an extreme importance for the above mentioned factor and like 0 a void importance. In the opened questions, the experts could indicate freely and value all those factors that they were considering to be necessary. The main results are exposed as follows.

Results of the study.

Asked about the importance of a series of factors in the business environment of the companies and the strategies that these adopt in consequence, the interviewed ones answered in general in the way gathered in Table1.

In general, all the questioned factors have been considered to be relevant by the experts. It is remarkable to consider that the experts do not do any distinction between hotels and restaurants, thinking that they present similar trend as for their future evolution. The adjustment to the technological change is considered as " very important" by the consulted experts, so much regarding information new technologies and its importance as channel of information and sale, as the increasing modernisation of the processes inside the companies, even in traditionally few tech areas like in Room and Cleaning Service.

All the strategies on which the experts were questioned deserved a good consideration, being evaluated at least as "important" and in some cases as "extremely important". Among the above mentioned three are outlined that seem to be intimately related: the improvement in quality, the improvement in the attention to the client and the increase of the workers' skills. Parasuraman, Zeithaml and Berry (1993) already indicated that the organizations that offer services that are highly interactive, that are intensive in workforce and that those services offered in different places are specially vulnerable to present faults in the quality of the service. The lack of quality is specially detected when the personnel do not have the skills to do their jobs with the required level of excellence. The achievement of the aim of quality improvement has much to do with the improvement in the attention to the client and for it, qualified workers are needed to reach the scheduled quality aims. In this context it is understandable that the reduction of personnel's costs has only been considered by the consulted experts only as "important" opposite other options as the improvement in the formation of the workers that have been considered as "extremely important".

They have also been distinguished as "very important" strategies the introduction and development of new technologies and the development of new products and markets. Two strategies that, partly, are very each other related, since it is outlined the role of the information's new technologies as an element to make known or to directly commercialise lodging and catering products. The reduction of operative costs has been considered equally as "very important" by the experts.

There was not so much agreement among the experts at the moment of considering some questions concerning the current training specification of the workers in the sector. With regard to the companies that provide worker's training, in an aggregated way, 25.64% of the people inquired consider that less than the quarter of the lodging companies offer training plans to their workers; almost a third estimates between a 26 and 50% the number of lodging companies training their workers and exactly a third of the people inquired estimates this number between 51 and 75%. Only 10.26% estimates that most part of the

lodging companies care for establishing mechanisms of internal training. In reference to the restaurants, the division between experts is even bigger.

Table 1 Importance of diverse factors in the environment and the companies' strategies.

ENVIRONMENT	HOTELS			RESTAURANTS		
	Average	Medium	Stan.Dev.	Average	Medium	Stan.Dev.
Increase of Competition	3.53	4.00	1.00	3.57	4.00	0.89
Market's share Loss	3.23	3.00	1.17	3.21	3.00	1.24
Technological Change	3.48	4.00	1.05	3.40	4.00	1.14
Laws' Reformation	3.09	3.00	0.96	3.07	3.00	0.95
Changes Products/Services	3.86	4.00	0.91	3.84	4.00	0.94
Other Factors	3.86	4.00	0.38	3.83	4.00	0.41
STRATEGIES						
Reduction of Operative Costs	3.71	4.00	0.82	3.71	4.00	0.79
Reduction of Personal Costs	3.24	3.00	1.38	3.29	3.00	1.34
Increase Training Level	4.41	5.00	0.89	4.43	5.00	0.89
New Technology	3.76	4.00	0.83	3.73	4.00	0.86
Activity's Reorganization	3.39	3.00	0.73	3.24	3.00	0.99
Attention to the client	4.73	5.00	0.53	4.67	5.00	0.66
Quality's improvement	4.47	5.00	0.77	4.43	5.00	0.82
New Products and/or Markets	3.69	4.00	0.98	3.63	4.00	1.05
Other Strategies	4.50	4.50	0.58	4.25	4.50	0.96

Meaning of the valuations: 0= not important at all; 1= of few importance; 2= with some importance; 3= important; 4= very important; 5= extremely important

Regarding the kind of company that offers training to its workers, as expected, a wide majority considers that the big hotel and restaurant chains are the ones that provide with a bigger training. They are followed in importance by the big establishments although, as some experts point out, those use to belong to the big chains, specially concerning the hotel ones. For almost 19% of the interviewed people, the existence of training plans depends, more than on anything else, on the politics of human resources that is maintained by the company, it is even more relevant than its size or the developed activity. The training programs are taught mostly at the place of work of the companies and in specific training centres. However, while at hotels the programs are taught at the same place of work in a

70%, restaurants revert to training centres in the 67% of the cases. This difference could be explained by:

- ✓ The no existence of appropriate infrastructures for training in restaurants, such as classrooms or training rooms, computer equipment, etc.
- ✓ The hotels belonging to chains or associated under another kind of union can organize courses for the staff of different establishments of the chain in a unique centre of work.

They were also asked about the skills that are more frequently developed by the training programs used in the firms of the sector. According to them, these skills consist of the knowledge of the quality systems and of the safety and hygiene rules at work, followed at a close distance by the technical skills related to the different jobs. The quality systems became the first place concerning the skills to be developed at the areas of Reception and Administration, Restaurant and Room service, as well as Cleaning service, in this last case with the same value as the one belonging to the safety and hygiene rules at work. Besides this last area, safety and hygiene rules at work have got also the first place between the skills to be developed in the areas of Maintenance and Technical Services, and, specially, in the Kitchen Area, where technical skills are also considered to be priority knowledge. In the Restaurant area the technical skills do also have an important place.

Generally speaking, in the Reception and Administration area most of the teaching efforts are focused, followed by the Restaurant and Kitchen area. The places where these efforts are less important are Maintenance and Technical Services as well as in Room and Cleaning service. Interpersonal skills as well as computer knowledge are specially developed in the Reception and Administration area, and environmental management is developed in the Room and Cleaning service as well as in the Maintenance and Technical Services Department. It is remarkable to consider that computer skills have got the second to last position concerning the training efforts of the firms and it is also important to consider that none of the consulted experts have spoken about the possibility of using audiovisual techniques for training purposes, which could be a relative cheap choice and

which could also be used in some areas of both sectors, like the way of preparing a room for a banquet , how to put the dishes on the tables, kitchen contests, ways of attending clients,...

One of the main goals of this projects consists of the assessment of the emergent training needs inside the sector, where we hoped to find remarkable references to the impact of new technologies. Particularly speaking, in this point the work consisted of making a research regarding the future perspectives among the consulted experts related to the following questions:

- ✓ Which possible changes can be expected in the skills required in the future.
- ✓ Which skills will be the most limited ones.
- ✓ Which will be the impact of the required skills concerning productivity and competitiveness in the firms.
- ✓ Which kind of skills will be more or less important in the future comparing them with today's ones.

The first one was considered by means of asking the following question: *Do you expect some kind of change in the coming years concerning the skills which will be demanded by the firms of your sector?* The results of the answers given by the interviewed people are showed in Table 2.

Table 2. Most required skills in the future

HOTELS	%	RESTAURANTS	%
No change is expected	29.79	No change is expected	0.00
New Information Technologies	29.79	New Information Technologies	0.00
Higher skills level	21.27	Higher skills level	4.46
Skills referred to the customers' attention	10.64	Skills referred to the customers' attention	18.18
Quality	4.26	Quality	0.00
Specific kitchen skills	4.25	Specific kitchen skills	18.18
Languages	0.00	Languages	18.18

Regarding the preceding table, the following thoughts can be expressed:

- a) Concerning the hotels, 30% of the interviewed experts consider that no changes in the required skills of the sector are expected, but concerning the restaurants, this

answer is not given in no case. This difference can be explained by means of the existence of a higher development in the training profiles as well as by means of the detection of the education needs which happens more in hotels than in restaurants. This means that the hotel sector has got more developed policies concerning training needs than the restaurant sector ones. Due to this, the training needs can be expected in advance and the training plans can also be adapted.

- b) In both cases, the existence of a in all senses more qualified staff is regarded as a need, concerning basic as well as specific skills.
- c) Regarding the hotel sector, 30% of the interviewed experts are concerned with the use of the new information technologies. No one of the restaurants' experts does speak about this issue. This could be explained because of:
 - ✓ The lower introduction of the new technologies in the restaurant's sector.
 - ✓ The higher dependence of the hotel firms on these technologies concerning the operation processes, specially the marketing ones.
- d) In hotels as well as in restaurants, the issues related to the customer's attention and the quality have got a certain importance. As already mentioned, these aspects are considered by the consulted experts as a extremely important ones in the firm's strategy. In both cases, some specific kitchen activity needs are mentioned, like rationalization, process' analysis, risks analysis and critical control points.
- e) For the last, languages skills appears in the restaurants as a future demand, but this aspect does not appear in the case of the hotels. It is supposed that this happens because in the hotels the knowledge of languages it is considered to be passed.

Table 3. Skills which are expected to be limited in the future

HOTELS	%	RESTAURANTS	%
Skills concerning room and kitchen	50.00	Skills concerning room and kitchen	43.48
Higher skills	19.57	Higher skills	8.70
Languages	6.50	Languages	0.00
New Information Technologies	6.50	New Information Technologies	13.04
Lower skills	6.50	Lower skills	0.00
Client's attention and marketing	4.43	Client's attention and marketing	34.78
Others	6.50	Others	0.00

Regarding to the skills which there will be a shortage in the future, the ones in Table 3 were underlined. At last, we must indicate in both cases, that is, in the hotel and in the restaurant sector, that there can be observed a certain shortage in the skills related with the new information technologies, as a consequence of the permanent technological revolution that is taking place in that field. Other skills expected to have a shortage in the future are the control of new systems (of quality, environmental ones, Risks analysis and Critical Control Points, etc) and rationalization processes.

Then, the experts were asked, thinking about the training needs of the workers of the sector, if they could value the skills shown in the table in terms of importance relating them to productivity and competitiveness within companies. The objective of this question is to determine which skills are considered more important regarding competitiveness and productivity. As it is proposed by Porter (1999), the key of the profitability and growth, and even more of survival of the firm, is the conquest of a singular competitive position and to continually improve it. Prosperity arises if there is the ability of increasing the productivity continuously. Getting high levels of productivity derives from the use of an advanced technology and from a very qualified people. Considering this approach, there have been set out some skills to the experts and they have been asked for an appreciation, with a predetermined scale, regarding the impact in competitiveness and productivity in the companies.

The rest of the skills (related with team work and objectives, interpersonal skills, change's adjustment and new technologies) are considered practically as very important. These valuations are coherent in a business environment that, as we said before, is characterised by:

- ✓ An every time more globalized market.
- ✓ More speed in changes in all companies' areas: financing way, commercialization, innovation, a shorter period of products' development, etc.
- ✓ A higher competitiveness of the tourist sector.
- ✓ A consolidation of the Information Age.

- ✓ A great importance of personal relations, from an internal and also from an external point of view.

Finally, a valuation from the experts about the evolution of the relative importance in the future of the skills mentioned before was required, indicating the skills that will be more or less important than in the present time. The obtained data are shown in Table 4.

Table 4. Relative importance in the future of the professional competences comparing them with the present time ones

PROFESSIONAL COMPETENCES	HOTELS			RESTAURANTS		
	Average	Medium	Stand.Dev	Average	Medium	Stand.Dev.
Basic (Arithmetic, reading, writing)	2.79	3.00	1.61	2.79	3.00	1.61
Related to the planification (time and resources assignment...)	4.17	4.00	0.75	4.15	4.00	0.77
Interpersonal (communication, negotiation with colleagues and clients)	4.58	5.00	0.54	4.58	5.00	0.54
Related with obtaining and using information	4.33	4.00	0.72	4.31	4.00	0.75
Adjustment to change and diversity	4.33	4.00	0.69	4.31	4.00	0.69
Skills in the use of computers	4.02	4.00	0.93	4.02	4.00	0.91

Meaning of the valuations: 0= not important at all; 1= of few importance; 2= with some importance; 3= important; 4= very important; 5= extremely important

Again in this question, the experts consulted agree basically in their hotel and restaurant valuations. Moreover, the conclusions obtained in this table could give coherence to the answers given before regarding the impact in competitiveness and productivity of the companies due to professional competences. And so it is, although all skills are described as important, the following can be remarked:

- ✓ The skills related to the new information technologies are considered as important, as a consequence of the irruption of these technologies in many operative areas of the analyzed companies.
- ✓ Finally, the adjustment to changes is also considered as important, possibly as a consequence of foreseeing every time more dynamic environments, where the possession of these kind of skills is every time more valued.

Summary and conclusions.

In this work the present situation and the future perspectives of the establishment of the new technologies have been analyzed in the Andalusian lodging and catering sector, from the perspective of the impact that these have in the needs of the workers qualification, applying the Delphi methodology to a group of 50 experts in the field who develop their activity in Andalusia. With them there have been done some personal interviews in depth about the basis of a questionnaire already used in other tourist sectors. The results obtained show the growing importance of the new technologies in the sector, although its impact presents sensible differences depending on the kind of company and the temporal space considered. So, the worry about the technological change is bigger in hotels than in restaurants, although in restaurants a more shortage of staff knowing the skills related to the new technologies is foreseen. The explanation to this apparent contradiction can be given by means of considering that the training effort has been bigger in hotels than in restaurants, which leads them to a better situation regarding the future.

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