Investigating Human Resource Management Policies of the ICT Labour Market

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Abstract

The Information and Communications Technologies (ICT) labour market presents special interest due to its continuous changes, which reflect the rapid evolution of Informatics and its relative technologies. This study focuses on the investigation of various issues of human resource management related to the occupation of the ICT graduates and the employing policies adopted by the Greek enterprises. A national survey was accomplished using as research tool a structured questionnaire. Totally 343 filled questionnaires were collected, reaching a response rate of 30.2%. Principal parameters of human resource management such as personnel searching and selection methods, employment policies and preferences, further education and professional training, performance evaluation, employment of special categories personnel and ICT graduates' employment according to educational level and degree title are thoroughly examined. Enterprise profile characteristics are also correlated with all dependant variables using bivariate and multivariate data analysis techniques. Results are discussed for every relevant parameter and final conclusions are drawn.

Keywords: Human resource management, information and communications technologies, multivariate statistical techniques

1. Introduction

The rapid evolution of Information and Communications Technologies (ICT) constitutes one of today's major phenomena with catalytic effects on numerous aspects of social and economic activities. The changes owed to ICT expansion affect significantly the labour market which is growing and altering continuously [Anastasiadis (2000)]. These changes diversify the ICT enterprises' occupation areas and affect the professions' profiles [Siskos et al. (2003)].

This paper focuses on the investigation of human resource management policies in the ICT sector, an important matter, which in contradiction with other issues of new technologies (like its use and effects) has not been studied in Greece. Some relevant studies concentrate on general examination of the ICT labour

market - though not exclusively - and conclude that the balance of supply and demand is positive in the vast majority of relevant professions [Katsanevas (1998) and (2002), Klimopoulos (2001)]. Another category of studies examines the ICT effects and evolution in particular business environments such as the banking system [Archontakis (1995)], the small and medium size enterprises [National Network of Research and Technology (2002)] or the public sector [Greek Computer Society (1996)] without 'touching' human resource management issues. A nationwide survey involved with the impact of ICT on individuals concludes significant growth of computer use and internet connection from all population groups of the country in every geographical region [Karounos (2002)]. A recent survey accomplished by the Greek Industries Association classifies ICT as the sector with the highest demand. This survey concludes through the responses of 620 enterprises that there is a great need for training, difficulties or inability to find specialized personnel and significant differentiations in personnel demand between the large cities and the rest of the country [Greek Industries Association (2001)]. Also an interview based survey on 80 enterprises of three traditional sectors (food, drink and clothing industries) focuses on the investigation of several human resource management issues and the correlation of offer's and demand's characteristics with companies' profiles [Karasavvidou et al. (1998)].

In this study it was decided to focus on the active ICT enterprises residing in Greece, considering that they represent satisfactorily the sector's labour market. These enterprises form a large well-defined population, sufficient for drawing reliable conclusions. Regarding the structure of this paper initially the research objectives and its contribution are defined. Successively the research methodology is described, consisting of the collection of a large number of data through a recent national survey conducted by the researchers. The main part is dedicated to descriptive and multivariate statistical analysis of all main results. The last section comments on the findings and the conclusions drawn.

2. Objectives and contribution

Human resource management obviously includes numerous parameters, which define and characterize it. This study focuses on important parameters describing the employment and occupation policies adopted by the ICT labour market at national level, such as personnel searching and selection methods, preferences for employment, further education and training as well as performance evaluation. The work deals also with issues associating the labour market to the outflows of the relevant educational system through the extensive analysis of ICT graduates' employment policies and occupation.

This work's main objectives are the detection of the employing policies and the management of ICT personnel adopted by the labour market of the field.

Furthermore it aims at investigating thoroughly the differentiations of all policies in relation to companies' main profile characteristics.

Research results and conclusions drawn are novel as this research is the first of its kind accomplished in Greece. Regarding its contribution and advance of knowledge at international level this study is also useful for many countries, especially those having common socio-economic characteristics with Greece and adopted in a similar way Informatics and its relative technologies.

3. Methodology

The investigation of human resource management is based on data yielded by a national survey which was conducted by the researchers during the year 2003. A survey using a structured questionnaire was chosen as the most feasible and reliable data collection method. It has been addressed to all ICT enterprises residing in Greece.

Internationally accepted techniques were applied for survey's conduct [Oppenheim (1966), Javeau (2000)]. Main emphasis was given to responses credibility and to response rate maximization [Watson (1965), Linsky (1975)]. In order to achieve this goal the research team collaborated with the two largest relevant collective bodies of Greece. The Federation of Hellenic Information Technology and Communications Enterprises (SEPE) and the Association of Information Technology Companies of Northern Greece (SEPVE) supported this research's accomplishment according to decisions of their boards of directors.

Enterprises identity and communication data were obtained from credible sources [ICAP (2002), Federation of Hellenic Information Technology and Communications Enterprises (2002), Association of Information Technology Companies of Northern Greece (2003)]. The procedure of sending the questionnaires and collecting them back took place from February the 20th till May the 10th of 2003. The questionnaires were sent through post and electronic mail to all 1134 Greek active ICT enterprises.

In order to raise the response rate, effective and credible techniques were applied, such as notifying the majority of enterprises through the World Wide Web for the upcoming research [Schegelmilch και Diamantopoulos (1991)], supplying a response envelope [Armstrong and Luck (1987)] as well as sending two reminders to those who did not respond initially [Pacel et al (1971)].

Respondents had four alternative ways to return the completed questionnaires: by post, by fax, via internet and through personal contact with the researchers. This variety contributed substantially for collecting a large number of responses [Linsky (1975)]. The number of collected valid questionnaires came up to 343 which correspond to 30.2% of enterprises' total population. The aggregate

response rate is considered according to international standards as satisfactory and adequate for deducing credible conclusions [Linsky (1975)].

4. Investigation issues

The data analysis of the responses given on a structured questionnaire investigates the human resource management policies adopted by the ICT enterprises and the impact of enterprise characteristics on them. Questions' wording and structure complies with the techniques adopted for effective surveys [Fowler (1993)] and measures of informants' attitudes [Oppenheim (1966)]. During survey's conduct complete anonymity was adopted for companies and respondents.

Five 'closed' questions were used for the analysis of enterprise profiles. The characteristics examined are the following: a) the location (analyzed for Athens, Thessaloniki and the rest of country), b) the age (in four, five year interval, categories according to the year of foundation), c) the size (in six categories based on employees number), d) the geographical range of activities (in four categories from local to international activation) and e) the occupation areas (seven areas were considered for examination, being recent research's results) [Kostoglou and Paparrizos (2003)].

All questions related to ICT human resource management policies are also closed, pre-coded, multiple choice or hierarchical. Closed questions were chosen because they allow investigation of the correlations between the variables and contribute to the reduction of the time needed to fill them in. The issues examined constitute the study's nine dependent variables. Each one of the following variables refers to a relevant policy of ICT enterprises and is examined separately through a corresponding question: a) the use of personnel searching methods, b) the use of methods applied for personnel selection, c) the occupation of graduates of all educational levels, d) the first choices of enterprises for employment, e) the use of special categories personnel, f) the existence of further education and training, g) the way further education and training is accomplished, h) the existence of performance evaluation and g) the analytical graduates' employment according to educational level and degree title.

The questionnaire was distributed initially in 20 specialists (businessmen and IT scientists), aiming at the evaluation of its clarity and validity. Based on the observations pointed out in the pilot survey the wording of the questions and the total structure were finalized.

5. Statistical analysis and results

The statistical analysis was accomplished with the use of SPSS 12.0, the statistical package for the social sciences [SPSS (2003)]. As independent variables are considered the main characteristics of company profiles and as dependent the ones determining the policies implied for ICT graduates' employment and management. The analysis is structured in three stages. In the first of them the independent and dependent variables are analyzed, so that the existing situation can be comprehensible and the policies used for managing human resources are discovered. In the second stage multivariate analysis in main components is used in order to group the dependant variables in fewer more representative ones. In the third stage the variables are correlated aiming at revealing and explaining the impact of enterprise profiles on human resource management.

5.1 The enterprises' profiles

The main ICT enterprises' characteristics describing their profile are presented at table 1. The analysis leads to interesting findings. More than 80% of enterprises reside in the prefectures of Athens or Thessaloniki. The last decade has been the most productive regarding the foundation of new enterprises. The majority of companies occupy up to 50 individuals, but there is also a memorable number (roughly 10%) of large enterprises with more than 100 employees, whereas their geographical range of activities is mainly national or international.

Table 1. Profile characteristics of Greek ICT enterprises

Location	(%)	Size (number of employees)	(%)
Prefecture of Athens	55.1	1 – 10	40.2
Thessaloniki	27.1	11 – 20	22.7
Rest of Greece	17.8	21 – 50	19.8
Age (year of foundation)	(%)	51 – 100	7.6
After 1999	12.3	101 – 250	5.9
Between 1995 and 1999	29.5	More than 250	3.8
Between 1990 and 1994	21.6	**Occupation areas**	(%)
Before 1990	36.6	Service Delivery	75.8
Activities geographical range	(%)	Technical Support	64.7
Local	8.5	Information Systems Support and Maintenance	61.5
Regional	16.6	Information Systems Development	59.8
National	41.7	Sales, provisions and market research	57.4
International	33.2	Education and Further Training	25.4
		Research	23

5.2 The dependent variables

The analysis of all variables selected to interpret human resource management policies adopted by the ICT enterprises is presented in table 2. In the next paragraphs the most important results are reported.

Table 2. Human resource management policies adopted by the Greek ICT enterprises

Personnel searching methods *	(%)	Further education and training	(%)
Recommendations by colleagues	81.3	Always	57.2
Announcement in newspapers	70.0	Usually	32.4
World wide web (announcement via a site)	45.5	Occasionally	7.6
Career services of Universities / TEI**	35.0	Almost never	2.6
Manpower Employment Organization	32.1	**Ways of further education and training**	(%)
Announcement in ICT magazines	21.3	Only by the company itself	19.9
Private employment agencies	15.7	Mainly by the company	68.4
Other methods	3.5	Mainly by exterior trainers	8.3
Personnel selection methods	(%)	Only by exterior trainers	1.2
Personal interview	93.3	Does not exist	2.2
Curriculum vitae evaluation	86.0	**Performance evaluation**	(%)
Trial employment for a limited period	59.8	Systematically for all positions	65.2
Selection based on recommendations	51.3	Only for certain positions	23.6
Personality and skills evaluation test	28.3	Scarcely or never	11.2
ICT graduates' employment policy	(%)	**ICT graduates' occupation**	(%)
TEI	76.7	TEI - Informatics	42.6
Universities	76.4	University – Informatics	39.9
Institutes of vocational training	47.8	University - Electrical / Computer Engineers	37.9
Postgraduate or doctoral degree holders	42.9	University - Computer Engineering &Informatics	31.5
Secondary education	33.5	IVT*** - Network Technicians	30.3
Private colleges of further education	28.0	Liberal studies colleges - Informatics specialities	26.5
First choices for employment	(%)	TEI - Electronic Information Systems	21.6
ICT graduates with working experience	72.9	IVT - Informatics Applications specialists	19.5
New ICT graduates without experience	42.6	University - Computer Science	17.2
Other graduates with ICT experience	24.5	University – Applied Informatics	16.0
ICT undergraduates for practical training	21.6	University – Informatics &Telecommunications	15.5
Subsidized personnel	21.0	TEI -Automation	14.6
Special categories personnel	(%)	IVT - Multimedia Applications Specialists	14.6
Exterior partners	68.8	Secondary education -Computer Systems Support	13.7
Undergraduates for practical training	47.5	IVT – Other relevant specialities	12.0
Subsidized personnel	36.2		
Part-time employees	23.3		
Seasonal personnel	7.6		

*   All figures represent enterprises' percentages having responded positively.
**   Abbreviation for the Technological Educational Institutions.
*** Abbreviation for the Institutes of Vocational Training.

Recommendations by acquaintances or colleagues (used by 81.3% of enterprises) and announcement in newspapers (70%) are the most widely used

ways for searching ICT personnel. Other ways gathering lower preference are the announcements via internet (45.5%), the University and TEI Career Services (35%) the Greek Manpower Employment Organization (32.1%), the announcements in ICT magazines (21.3%) and the private employment agencies (15.7%).

The selection methods applied for personnel employment are separated in three categories according to their frequency of use. The most popular method is personal interview being used by the overwhelming majority of enterprises (93.3%). Curriculum vitae evaluation stands in second position (86%). Trial employment for a limited period (used by 59.8% of enterprises) and selection based on recommendations (51.3%) belong in the second category. Personality and skills evaluation tests are also used by some companies (28%).

Regarding the employment policies of qualified personnel, University and TEI graduates present in the same degree the highest concentrations (just above 76%) and constitute the most important personnel category. Those who hold a postgraduate or a doctoral degree are selected by 42.9% of the enterprises, whereas almost half of them (47.8%) use specialized personnel graduated from the Institutes of Vocational Training. Finally, secondary education and Greek Manpower Employment Organization graduates are employed by one third of enterprises, while 28% of them use graduates from private institutions of further education.

Experienced ICT graduates enjoy the higher demand (concentrating 72.9% of responses). Second in preference, with a high difference, follow the new graduates without working experience (42.6%). Graduates in irrelevant specialities with ICT experience, students for their practical training and subsidized personnel are also used by 24.5%, 21.6% and 21% of companies respectively.

Exterior partners constitute the prevalent special category of occupied personnel (being used by 68.8% of enterprises). Use of undergraduates for practical training (47.5%), subsidized personnel (36.2%) and part-time employees (23.3%) has also been reported. Seasonal personnel are employed only by a small minority of enterprises (7.6%).

The vast majority of ICT enterprises educate their personnel during its engagement. More than one half of the companies (57.2%) train their employees in every case, while 32.4% train them usually. In most cases personnel training is accomplished exclusively or mainly by the company itself (88.3%). Personnel's performance is evaluated systematically by 65.2% of enterprises. Only a few companies (11.2%) do not evaluate (or do it rarely) their employees performance.

ICT graduates' employment dynamics presents significant dissimilarities depending on educational level and department of origin. Specialities being used by more than 30% of enterprises are TEI graduates from departments of Informatics (42.6%), University graduates from synonymous departments (39.9%), Electrical and Computer engineers (37.9%), Computer and Informatics engineers (31.5%) as well as Network Technicians from Institutes of Vocational Training (30.3%). Employment rates between 14% and 30% present Informatics specialities

from private colleges. University graduates in Applied Informatics or in Communications and some other ICT specialities from TEI. Employment rates under 14% appear for the remaining specialities of IVT and secondary education. However as the actual numbers of the graduates of the various ICT specialities are very different, the above results can not be used as demand indicators.

The reduction of the variables which portray the main ICT specialities of all educational levels enables more comprehensive analysis for the detection of the existing correlations between them. For this purpose principal component analysis with Varimax rotation has been used. Table 3 presents the formation of three main components with eigenvalues greater than unity. The three main components attribute 95% of the 15 initial variables' variance, which means that they can represent them with significant precision. For each initial variable the factor loadings with the three components are calculated. Factor loadings with values higher than 0.40 are considered as significant. Each component correlated in a statistically significant degree with a group of initial variables describes adequately this group and can therefore represent it in further analysis

Table 3. Factor loadings of initial variables with the main components for the employment of ICT graduates after Varimax rotation

	Component 1 "ICT graduates of Universities and TEI Informatics"	Component 2 "Main specialties of IVT and secondary education"	Component 3 "Remaining specialities of TEI and IVT"
Total variance explained	**68%**	**17%**	**10%**
University - Computer Engineering and Informatics	**0.727**	0.029	- 0.057
University – Informatics	**0.702**	0.208	- 0.077
University - Computer Science	**0.662**	0.129	0.111
University - Informatics and Telecommunications	**0.604**	0.017	0.349
University - Electrical and Computer Engineers	**0.591**	- 0.047	0.182
University - Applied Informatics	**0.566**	0.056	0.232
TEI - Informatics	**0.502**	0.287	- 0.046
IVT - Network Technicians	0.142	**0.656**	0.116
Liberal studies colleges - Informatics Specialities	- 0.058	**0.636**	0.108
IVT - Informatics Applications Specialists	0.126	**0.607**	0.117
IVT - Multimedia Applications Specialists	0.244	**0.550**	- 0.106
Secondary education - Computer Systems Support	0.006	**0.410**	0.278
TEI - Electronic Information Systems	0.175	0.258	**0.657**
TEI – Automation	0.274	- 0.099	**0.637**
IVT – Other related specialties	- 0.105	0.319	**0.587**

* Factor loadings with value greater than 0.40 are considered to be statistically significant.

The first component represents the potential employment of all University graduates as well as of those coming from the departments of Informatics of TEIs. It interprets 68% of the total variance. The second component, interpreting 17% of total variance, includes the main specialities of IVTs, of secondary education and of private colleges. The third main component describes the TEI specialties coming from departments of Electronic Informational Systems and Automation as well as the remaining specialities from IVTs. It interprets 10% of total variance. The factor loadings for all main components are positive, which means that any increase in the value of each component is accompanied by increase of the corresponding initial variables. This finding is useful for the interpretation of correlation coefficients.

5.3 The impact of enterprise profiles on human resource management

This section studies the correlations between the dependent variables and the characteristics of enterprise profiles. Since these characteristics are described by ordinal variables, use of non parametrical correlation coefficients is allowed. Spearman's correlation coefficients were selected for the analysis and were calculated for all possible cases. Table 4 - divided in six parts - includes all correlation coefficients (the statistically significant ones are marked with ** for significance level of 99% and with * for a 95% level). Regarding the explanation of table's coefficients, the independent variables were quantified in the following way: central (located in the area of Athens), newer, smaller and locally activating ICT enterprises were given lower values in the codification of the corresponding variables. The variables representing each occupation area are binaries.

Table 4. Spearman's correlation coefficients between the variables
describing human resource management and the characteristics of ICT enterprises

Table 4.1. Personnel selection methods

	Selected by % of enterprises	ICT enterprise characteristics				
		Location	Age	Size	Geographical range of activities	Number of occupation areas
Personal interview	93.3	**-0.124***	0.087	**0.188****	**0.153****	0.062
Curriculum vitae evaluation	86.0	**-0.130***	0.023	**0.213****	**0.164****	**0.122***
Trial employment for a limited period	59.8	0.083	-0.078	**-0.168****	-0.080	**0.171****
Selection based on recommendations	51.3	0.027	-0.013	0.011	-0.069	-0.001
Personality - skills evaluation test	28.3	0.050	-0.096	0.007	0.081	0.069

Table 4.2. Personnel search channels

	Selected by % of enterprises	ICT enterprise characteristics				
		Location	Age	Size	Geographical range of activities	Number of occupation areas
Recommendations by colleagues or acquaintances	81.3	-0.056	-0.032	0.043	-0.044	0.061
Announcements in newspapers	70.0	-0.082	0.086	**0.158****	0.096	0.043
Internet (announcement via a website)	45.5	**-0.211****	0.038	**0.361****	**0.261****	0.018
Career Services	35.0	0.008	0.079	0.077	0.078	**0.123***
Greek Manpower Employment Organization	32.1	**0.188****	-0.075	**-0.228****	**-0.195****	**0.155****
Announcements in ICT magazines	21.3	-0.048	0.041	0.064	**0.162****	0.032
Private employment agencies	15.7	-0.027	0.093	**0.185****	-0.005	0.066

Table 4.3. Graduates employment policy

	Selected by % of enterprises	ICT enterprise characteristics				
		Location	Age	Size	Geographical range of activities	Number of occupation areas
TEI graduates	76.7	-0.084	**0.154****	**0.335****	0.042	**0.154****
University graduates	76.4	-0.098	0.070	**0.277****	**0.148****	**0.166****
IVT graduates	47.8	-0.043	0.022	**0.206****	**-0.137***	**0.164****
Postgraduate or doctoral diploma	42.9	**-0.124***	-0.021	**0.383****	**0.239****	**0.119***
Secondary education	33.5	0.058	0.068	0.081	-0.062	**0.130***
Private schools	28.0	-0.021	0.065	**0.199****	-0.034	-0.001

Table 4.4. First choices for employment

	Selected by % of enterprises	ICT enterprise characteristics				
		Location	Age	Size	Geographical range of activities	Number of occupation areas
ICT graduates with experience	72.9	**-0.123***	0.038	**0.234****	**0.162****	0.031
New ICT graduates without experience	42.6	**-0.147****	0.023	0.037	-0.001	0.052
Graduates of other specialities with ICT experience	24.5	-0.010	-0.001	0.081	0.050	0.003
ICT undergraduates for practical training	21.6	0.098	-0.057	**-0.109***	-0.063	0.068
Subsidized personnel	21.0	**0.189****	-0.031	**-0.235****	**-0.120***	0.014

Table 4.5. Employment of other categories personnel

	Selected by % of enterprises	ICT enterprise characteristics				
		Location	Age	Size	Geographical range of activities	Number of occupation areas
Exterior partners	68.8	0.086	0.092	-0.028	**-0.124***	-0.082
University or TEI undergraduates for practical training	47.5	-0.014	-0.082	**-0.190****	-0.060	**-0.190****
Subsidized personnel	36.2	**-0.111***	0.058	**0.106***	0.089	**-0.150****
Part time employees	23.3	-0.037	0.046	0.041	-0.003	-0.028
Seasonal personnel	7.6	0.016	0.076	-0.003	0.021	**-0.109***

Table 4.6. Graduates employment by educational level and department of origin

	ICT enterprise characteristics				
	Location	Age	Size	Geographical range of activities	Number of occupation areas
Component 1 "ICT graduates of Universities and TEI Informatics"	-0.058	0.101	**0.417****	**0.264****	**0.173****
Component 2 "Main specialties of IVT and secondary education"	-0.012	**0.117***	**0.149****	-0.093	**0.141****
Component 3 "Remaining specialties Of TEI and IVT"	-0.043	**0.113***	**0.191****	0.009	0.052

* p<0.05
** p<0.01

6. Results and findings on human resource management

This section describes the most important findings related to the impact of enterprise profiles on human resource management policies. All results are based on table's 4 statistically significant correlation coefficients.

6.1 Methods for personnel selection

The results of table 4.1 show that personal interview and curriculum vitae evaluation are very widely used for personnel selection in the ICT labour market, particularly by large, located in Athens or Thessaloniki and with wide geographical range of activities enterprises. Additionally the latter method is used more intensively by companies with many occupation areas. Trial employment constitutes a popular relevant method for almost 60% of enterprises, mainly by those with fewer employees and wider activities.

6.2 Personnel search channels

According to table 4.2 recommendations by colleagues constitute the most important search channel for ICT personnel and are used uniformly by all enterprises, presenting nearly null correlations with all their profile characteristics. Announcements in newspapers are also an important channel, used almost uniformly by the enterprises. However larger companies tend to use this channel more.

The use of World Wide Web for personnel search is wider for central, larger and with broader geographical range enterprises. Publishing announcements in ICT magazines or journals is in general used uniformly, nevertheless is preferred by enterprises with wider geographical range of activities.

The Greek Manpower Employment Organization as personnel engagement channel is used mainly by provincial, small and with limited geographical range enterprises. It is also preferred by companies with geographically wide activities.

The private employment agencies acquire more important role for personnel search in enterprises with large number of employees. Finally, the Career Services constitute an important personnel employment channel for companies with a large number of occupation areas.

6.3 Graduates employment policy

The results of table 4.3 show significant differentiations between the policies of ICT enterprises. Large companies engage in a much greater degree all graduates apart of those coming from secondary education (table 4.3). Companies activating at international or national level prefer strongly for employment postgraduate or doctoral diploma holders as well as University graduates. The same companies seem to avoid engaging IVT graduates.

Enterprises involved in many occupation areas employ extensively all kinds of graduates apart of those of those coming from private colleges. TEI graduates are preferred by older companies. Finally the enterprises located in the capital favor the employment of highly qualified personnel.

6.4 Main preferences for employment

Table 4.4 shows that ICT graduates are, irrespectively of working experience, preferred by central, large and with wide activities enterprises. On the contrary small, locally activating and residing in the province companies tend to prefer subsidized personnel. Small companies employ more often undergraduates for practical training.

6.5 Employment of special categories personnel

The presence of statistically significant correlation coefficients proves the impact of enterprise size and number of occupation areas in the employment of various personnel categories, apart of typical full time employees (see table 4.5).

Large enterprises tend to avoid undergraduates for their practical training and employ more subsidized personnel. Exterior partners are not employed so much by companies activating in national or international level. Finally, the ICT companies involved in many occupation areas employ fewer undergraduates for practical training, as well as less subsidized and seasonal personnel.

6.6 Graduates employment by educational level and department

The statistically significant correlation coefficients of table 4.6 lead to interesting findings, concerning the differentiations between the three categories of graduates. ICT graduates of Universities and departments of Informatics of TEI are employed much more intensively by large, nationally or internationally activating and with an above average number of occupation areas enterprises. Older and larger companies use more often graduates coming form Institutes of Vocational Training, secondary education and Automation specialists form the three relevant departments of TEI. Furthermore more IVT and lyceum graduates are employed by enterprises with many occupation areas.

7. Conclusions

This paper examined the main human resource management policies currently adopted by the Greek ICT labour market and the impacts of enterprise profile characteristics on these policies.

ICT enterprises use many channels for searching new personnel, which intend to employ. Recommendations and announcements in newspapers constitute the two most frequently used channels. They are used uniformly by all types of enterprises. Regarding the less popular personnel searching channels large enterprises use more the World Wide Web and the private employment agencies. The Greek Manpower Employment Organization constitutes a popular source for personnel employment by small, provincial and locally activated enterprises. The Career Services of Universities and TEIs are used uniformly by all companies and even more by those having many occupation areas.

Personal interview and curriculum vitae evaluation for personnel selection are adopted by the vast majority of enterprises. Both methods are used in an even

higher degree by large, central (located in Athens or in Thessaloniki) and widely activating companies.

University and TEI graduates are the two main ICT personnel categories. These graduates as well as those from Institutes of Vocational Training and postgraduate diplomas holders are employed more by large and with extended occupation areas enterprises. Provincial companies focus more on subsidised personnel. Private colleges' graduates are mainly employed by large companies.

According to the results of the analysis further education and professional training of ICT employees and evaluation of their performance constitute essential operations of the enterprises being adopted by their vast majority.

Without doubt human resource management constitutes an integral part for the operation of the enterprises belonging to the Information and Communications Technologies sector. This work's results and conclusions about the adopted policies related to the selection and occupation of the educational system's outflows are helpful for both; enterprises and graduates. They can contribute respectively in: a) the improvement of the effectiveness of the ICT enterprises in relation to the policies adopted for the management of their employees and b) the better orientation of the graduates towards the labour market.

In our point of view it would be useful to accomplish similar studies in the ICT sector in frequent time intervals (every three years would probably be a rational proposal) and to extend them in more human resource management issues.

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