Elements of Workspace as Factors of Workspace Satisfaction in the ICT Sector in Macedonia

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Abstract

The great expansion of the Information and Communications Technology (ICT) industry in the last two decades has brought about massive changes to the European as well as to the global economy by transforming them from an industrial structure to a network or knowledge based economic system. Therefore, companies make organizational and structural changes to become more efficient and responsive to changing markets and look to physical facilities to reinforce these changes (Wineman and Adhya, 2007). Consequently today's workplace not only supports everyday duties, but also the sociocultural wellbeing of employees. Corporate investment in job satisfaction, employee wellbeing and organizational commitment has become an important determinant of organizational success. Although there has been a lot of research on exploiting the link between the workspace and job satisfaction in European and worldwide companies (Veitch, et.al, 2007; Wineman and Adhya, 2007; Wolfeld, 2010; Knowght and Haslam, 2010), there is a lack of such research in the Republic of Macedonia. The purpose of this study is to examine the relationship between the physical workspace environment and the satisfaction of ICT employees. The research was undertaken in two ICT organizations in Macedonia using employee surveys. The results show an overall high level of satisfaction with various aspects of the workspace. Although there were no differences in overall job satisfaction between the employees, those working in individual offices were most satisfied with their privacy by comparison with workers in other types of office. The physical aspects of the workspace such as: storage space, office aesthetics, access to co-workers, meeting spaces, the comfort of the space provided, privacy and lighting were found to be significantly correlated within overall workspace satisfaction. The findings therefore point to the importance of paying close attention to workspace design elements as they are connected with the perception of the workspace as an important aspect of job satisfaction.

Key words: workspace environment, office space design, workspace satisfaction, job satisfaction

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Introduction

Job satisfaction is a term that has been studied in numerous research projects. Some researchers consider it to be the most studied work-related attitude in organizational behavior and human resource literature (Ghazzawi, 2010). Numerous studies have been dedicated to uncovering the factors that influence job satisfaction as well the effects of job satisfaction on individual and organizational performance. Although studies have been dedicated to the relationship between psychosocial variables and job satisfaction, very few projects have been dedicated to understanding the relationship between the physical office environment, satisfaction with the workspace and overall job satisfaction (Danielsson, 2005). However the office space can have a powerful influence on an employees' behavior (Ornstein, 1989). The workspace as a factor of job satisfaction is only one aspect of a worker's job – partial job satisfaction, however, according to the latest investigation is one of the most important factors. Workspaces have to facilitate not only the primary tasks of working units but also the less formal ones. They should also reach even beyond the facilitation of work tasks and support the social and cultural well-being of participants (Wineman and Adhya, 2007).

As such, this study aims at contributing to this body of literature by studying the effects of various architectural elements of the workspace and satisfaction with different aspects of the workspace with regard to overall job satisfaction. The purpose of this research is to examine a workspace as a specific aspect or factor of the overall job satisfaction of workers in one specific professional field – namely, the ICT industries of Macedonia by comparison with such experiences from the EU. The results should provide other researchers, HR managers, architects and designers with insights into dealing with the design aspects of an architectural space within the working environment while understanding its meaning as an important factor in job satisfaction.

The ICT industry has been chosen as a subject of research because it is a field that has experienced remarkable expansion over the last 50 years in the changing and reshaping of other professional fields in the global economy through the Information and Communication Revolution (Rose, 2007). Working in this field offers employees secure, profitable work with excellent opportunities for a remarkable career. The work design category for this field, because of its nature, includes delicate variables such as: 1) freedom and autonomy – ICT professionals are one of the most autonomous workers; 2)

skills variety – the broad opportunity to use different skills and talents; 3) great task identity – the ability to complete a whole and identifiable task or product; 4) task significance – the opportunity to work on a task or project that has a substantial impact on others (Robbins and Judge, 2009). But despite a lot of opportunities, there are more and more obstacles each day connected with stress caused by the fact that each year there are less and less implemented software solutions. This situation produces enhanced turnovers and withdrawals from the profession. So, management is put in a position where it has to change the work conditions and work agreements in order to retain the work force (Korrapati & Eedara, 2010).

Besides the lack of studies focused on the physical aspects of the workspace as factors for job satisfaction there is also a lack of research that examines job satisfaction among employees in the ICT sector. This paper is focused on examining the effects that the environment produces on the job satisfaction of ICT professionals in Macedonia. There are 1,446 business entities in the ICT industries with more than 2,446 employees in 2012 (State Statistical Office of the Republic of Macedonia, 2013). The strengths and weaknesses of these companies are almost the same as with European examples – turnovers are a prevalent problem as these professionals show more loyalty to their profession than to the company. This is mostly due to the fast changes in the sector and the technology and the need for constant flexibility (Scholarios et al., 2008). Therefore studying all the elements that can help in retaining this workforce as well as help increase their productivity is particularly important.

Literature Review

One of the most examined issues in the field of work and organizational behavior certainly is job satisfaction, a term that denotes a positive feeling about one's job (Robbins and Judge, 2009). Other researchers define it as a pleasurable or positive emotional state resulting from the appraisal of one's job or job experience (Kanwar et al., 2009). This kind of emotional state of the worker is favorable to lower staff turnover and worker absenteeism and is related to higher productivity. Job satisfaction can also be defined as an attitudinal variable such as in the Eurofound (2012): "Job satisfaction is simply how people feel about their job and different aspects of their jobs. It is the extent to which people like (satisfaction) or dislike (dissatisfaction) their jobs".

The issue of job satisfaction is particularly important as it is tied to workers' productivity as well as turnover (Kanwar et al., 2012). This is important as according to Vitra's Citizen Office Concept (Anon, 2010), there will be a war for talents in the near future, because there will be a shortage of knowledge workers on the global work market. This shortage of workers will be further enhanced with the retirement of workers from the Baby Boom generation and having fewer younger people available to replace them (Ouye, 2011). As part of the knowledge-based industry, ICT workers have different requirements than others when it comes to the work culture of a company in terms of work content, work methods, work style which define different and specific work environments (Kanwar et al., 2012).

The issue of job satisfaction becomes more important as we are witnessing increased competition on the globalized world market where companies are exploring new ways of become more efficient through the ability to be more responsive to changes. To achieve this goal, companies have to remodel the traditional-hierarchical structure to a decentralized team-oriented organizational structure (Wineman and Adhya, 2007). One of the means to achieve this is to reorganize physical facilities in order to reinforce the changes. Wineman and Adhya (2007) suggested that creation should not only be for the spaces themselves but that the main goal should be the ways in which those spaces interlink and how they constitute the fabric of the organization and the blueprint of opportunities for encounter. According to Wolfeld (2010) informal, impromptu interactions between employees enhance productivity, job satisfaction and organizational commitment and this can be carried out through an appropriate office layout design that will encourage face to face interactions and enhance these outcomes.

The physical elements of the workspace are not only important for enabling productivity. Research findings aimed at understanding the relationship between a building, social and personal factors and the perceived comfort of workers show that a perceived comfort in the space is strongly influenced by several personal, social and building factors and that their relationships are complex. Results showed that perceived comfort is much more than the average of perceived indoor air quality, noise, lighting and thermal comfort responses. On the other hand, findings based on European and international studies, indicate that workspaces as well as living spaces, could have a major influence on peoples' well-being (Blyssen et al., 2010).

Ornstein (1989) stated that the interior design of offices influenced job performances, job attitudes and impressions. One very important aspect is the

design of the space consisting of: the arrangements of offices – office layout; furnishings – furniture design and the layout of other physical objects, whether designed or not. According to the study, there are different elements in office design that influence employees' behaviors, that can be divided into two major categories: 1) office layout, which is connected with the configuration of office space and typology of office rooms and the typology of office furniture systems; and 2) office décor, that communicates with the style of the interior elements such as furniture, decorative objects, and physical elements of the environment: noise, lighting and temperature. Ornstein (1989) defined guidelines for developing a more effective and more efficient design of office spaces: 1) when changes to the physical settings of workspaces occur managers should consider the opinions of the employees affected by those changes; 2) the nature of the work and the physical characteristics of the machinery needed should be taken into consideration in order to meet the personal needs of employees regarding privacy, quiet or some special office events that require special needs; 3) management should define the organization's values and goals that are going to be conveyed through specific interior design because it is a strong medium for expressing one's image or identity and will help in reinforcing the impression that workers perceive of the entire organization; 4) besides employees, customers are important as well – work space arrangements should promote and foster customer interaction; 5) finally, office design is important when it comes to attracting potential employees. Orstein (1989) concluded that office design should be considered as a powerful tool in gaining the maximum work performance of employees with a strong impact across the work-based community.

Having in mind the importance of the workspace in attracting and retaining employees, Newsham et al. (2009) conducted a study to discover the links between the conditions of the indoor environment and job satisfaction. The authors found a significant correlation between overall environmental satisfaction and job satisfaction mediated by satisfaction with management and with compensation. The physical work environment, which is usually provided by management, demonstrates management's attitudes toward the employee and their intention to influence satisfaction with other aspects of the employment relationship.

Other studies were mostly concerned with the effects of a particular office type – open plan office design on the indoor environment and on occupant satisfaction with the environment. The finding revealed that employees who are more satisfied with their work environment were also

more satisfied with their jobs (Veitch et al., 2007). One large study conducted by Danielsson (2005) investigated the impact of environmental factors on office workers through their perception and experience of office environments; satisfaction with the office environment and through health status and job satisfaction in connection to office environment depending on different office types. The study explored 7 office-types by architectural features and by functional features: 1) The cell-office (a single person office); 2) The shared-room office (2-4 people sharing a room); 3) The small-open plan office (4-9 person room); 4) The medium open plan office (10-20 person room); 5) The large open plan office (more than 20 person room); 6) The flexi-office (without personal work station) and 7) The combi-office (without strict spatial definition). The investigation was held in 26 companies from Sweden, mostly from the media and ICT industries. Being an architect, Danielsson (2005) recognized architecture and the physical environment as meaningful components of the psychological and physical well-being of people, despite the fact that other major aspects might also have an impact on an employee's individual health and well-being such as psychosocial factors at work. The results revealed remarkable differences between office types with regard to self-rated job satisfaction. In this sense employees in cell-offices are the most satisfied with design-related factors and the employees in flexi-offices were most satisfied with the social aspects of their physical environment. Employees in shared and combi-offices were most dissatisfied on the matter of noise and privacy and employees in open plan offices report highest dissatisfaction on all matters. Different office types have different architectural and functional features that can influence the employees' stress level (Bodin, Danielsson and Bodin, 2010).

The issue of the overall work environment, satisfaction with workspace and overall job satisfaction is an issue of special importance in the ICT sector. Large ICT companies have realized that the organization's performance is affected by the job satisfaction of their employees (Kanwar et al., 2009). The ICT industry is also faced with a high workforce turnover and problems with the retention of skilled personnel. Carayon et al. (2006) found a significant correlation between job satisfaction and a decision whether to stay or leave the job turnover. A lot of researchers claimed that the ICT profession is a unique and distinctive profession because of its recent growth as a field and its unique workforce structure. ICT employees' job satisfaction among other elements common to most workers especially depends on software project success (Korrapati and Edara, 2010). According to this study there is a direct

link between an increased project failure rate and turnover across the globe. Microsoft, among others, maintains good relationships by providing challenging jobs, generous benefits and finally a great work environment. Its management has displayed at the corporate campus more than 4,500 pieces of contemporary art pieces for building employees' loyalty, productivity and finally maintaining retention. The benefit is the company's growth to $44 billion in revenues since its founding (Robbins and Judge, 2009). Google, on the other side, is running a "Total Workplace" concept based on an all-round principle. According to Harper (2012), the company wants its employees to feel comfortable, while making them happy through a unique office environment that should simplify their lives. The offices have unconventional interior designs and no two offices looks alike. The result is that Google succeeded in reducing the relative importance of salary by changing the design of its work environments.

Therefore it can be concluded that there are numerous workspace elements connected to workplace satisfaction. Some of the important elements outlined in the literature are the type of office as well as various aspects of the physical design of the workplace, such as storage space, lighting, noise control and the like. Therefore this study will test for their significance on overall workplace satisfaction.

Methodology

To enable an understanding of the situation in the ICT sector in Macedonia regarding satisfaction with various elements of workspace design as well as the perception of the workspace as an important element of overall job satisfaction, the following hypotheses were tested:

Hypothesis 1: Workers that work in individual offices are more satisfied with their workspace than their colleagues in other office types.

Hypothesis 1.1: Workers in individual offices are more satisfied with the workspace storage.

Hypothesis 1.2: Workers in individual offices are more satisfied with the comfort of the workspace.

Hypothesis 1.3: Workers in individual offices are more satisfied with the privacy of the workspace.

Hypothesis 2: Higher satisfaction with different aspects of the workspace is positively connected to the perception of workspace as a meaningful aspect of job satisfaction.

Hypothesis 2.1: Higher satisfaction with workspace storage space is positively connected to the perception of workspace as meaningful aspect of job satisfaction.

Hypothesis 2.2: Higher satisfaction with workspace aesthetics is positively connected to the perception of the workspace as a meaningful aspect of job satisfaction.

Hypothesis 2.3: Higher satisfaction with access to co-workers is positively connected to the perception of workspace as a meaningful aspect of job satisfaction.

Hypothesis 2.4: Higher satisfaction with meeting spaces is positively connected to a perception of workspace as a meaningful aspect of job satisfaction.

Hypothesis 2.5: Higher satisfaction with the comfort of the workspace is positively connected to a perception of workspace as a meaningful aspect of job satisfaction.

Hypothesis 2.6: Higher satisfaction with the privacy of the workspace is positively connected to a perception of workspace as a meaningful aspect of job satisfaction.

Hypothesis 2.7: Higher satisfaction with lighting is positively connected to the perception of workspace as meaningful aspect of job satisfaction.

To help understand the various aspects of workspace satisfaction among workers in the ICT sector in the Republic of Macedonia this study used a questionnaire. Some questions in the questionnaire were based on previous studies to enable a comparison of the results. As such some questions were adapted to the Macedonian context from the studies done by Danielsson (2005) Newsham et al. (2009) and Veitch et al. (2007), other questions were specifically constructed for this study.

The study was conducted between January and March 2014 in two companies from the ICT sector in the Republic of Macedonia. The study used convenient sampling. Although this type of sampling is a non-representative sample and the generalizability of the findings might be compromised, it can be used in exploratory studies and as a base for further research (Coolican, 2004). Bearing in mind that this study is the first of its kind in the country and is mainly aimed at gaining an exploratory insight into the situation, this type of sampling was deemed appropriate.

The sample consisted of 71 employees from two different companies. Most of the participants were in the age group 26-35 (50% of the respondents) followed by 36-45 year olds (35,9% of the respondents), 46-55 year olds (9,4%) and 18-25 (4,7%) as shown in Table 1.

Table 1. Age of the respondents.

		Frequency	Percent	Valid Percent
Valid	18-25	3	4,2	4,7
	25-35	32	45,1	50,0
	36-45	23	32,4	35,9
	46-55	6	8,5	9,4
	Total	64	90,1	100,0
Missing	System	7	9,9	
Total		71	100,0	

Sixty one percent of the respondents were male and 39 were female and all of them worked on full-time contracts. Most of the respondents had a Bachelor's degree (68,2%), followed by a high-school certificate (27,3%) and Master's degree (4,5%). Most of the respondents had not worked for the companies for a very long time (see Table 2).

Table 2. How many years have you been working for the company.

		Frequency	Percent	Valid Percent
Valid	less than one year	9	12,7	14,3
	1-5 years	26	36,6	41,3
	6-10 years	12	16,9	19,0
	11-15 years	7	9,9	11,1
	16-20 years	5	7,0	7,9
	more than 20 years	4	5,6	6,3
	Total	63	88,7	100,0
Missing	System	8	11,3	
Total		71	100,0	

Out of the total sample of 71 employees, 36 employees were software developers, 11 employees were DBA administrators, and 24 employees were hardware specialists. However due to the small sample size and the interest of the study in the aspects of workplace design this classification was not part of the study. The study concentrated on looking at workspace satisfaction based on the type of office rather than occupation.

Results of the Study

Since this study is first of its kind in the Republic of Macedonia, the basic information about the type of office space as well as overall levels of satisfaction will be presented first. According to the results (see Table 3) most of the employees in the present study work in offices that they share with a few of their colleagues, followed by open space offices and individual offices.

Table3. Type of office

		Frequency	Percent	Valid Percent
Valid	Individual office	5	7,0	7,1
	Sharing with colleagues	51	71,8	72,9
	Open office	14	19,7	20,0
	Total	70	98,6	100,0
Missing	System	1	1,4	
Total		71	100,0	

To get an overall impression of the satisfaction with various aspects of the workspace this chapter will present a distribution of the satisfaction of employees regarding different aspects of the workspace (see Table 4). As it can be seen from the Table most of the employees are generally satisfied with the aspects of the workspace. The highest levels of satisfaction can be observed in relation to the location of immediate supervisors and access to colleagues, as well as freedom from distraction. The lowest level of satisfaction is observed in the issue of air quality, conversation and visual privacy, and the overall lighting of the workspaces.

Table 4. Satisfaction with aspects of the workspace

	Very unsatisfied	Unsatisfied	Neutral	Satisfied	Very satisfied
Color of the workspace	2.9	15.7	37.1	38.6	5.7
Window view	5.7	10	25.7	38.6	20
Size of the space	1.4	7.2	24.6	53.6	13
Location of immediate supervisor	1.4	2.9	30	48.6	17.1
Access to colleagues	1.4	1.4	10.1	63.8	23.2
Storage space	2.9	17.4	26.1	43.5	10.1
Location of the storage space	4.3	13	33.3	40.6	8.7
Freedom for personalization of my workspace	0	7.4	27.9	57.4	7.4
Natural lighting	4.3	8.7	18.8	47.8	20.3
Artificial lighting	1.4	4.3	24.3	50	20
Overall lighting	20	2.9	29	46.4	21.7
Freedom from distraction	1.4	2.9	21.7	60.9	13
Conversation privacy	10.1	17.4	31.9	34.8	5.8
Visual privacy	4.3	21.4	35.7	31.4	7.1
Noise level	4.3	14.5	31.9	42	7.2
Temperature	2.9	10.1	29	47.8	10.1
Air quality	5.8	21.7	36.2	27.5	8.7
Floor covering	4.3	15.9	29	42	8.7
Office furniture	0	15.9	36.2	37.7	10.1
Office layout	2.9	14.5	39.1	34.8	8.7
Formal meeting space	1.4	7.2	26.1	52.2	13
Informal meeting space	1.5	14.9	31.3	41.8	10.4
Overall satisfaction with the workspace	1.4	2.9	31.9	53.6	10.1

To test the first hypothesis a Kruskall-Wallis test for testing the variance between the groups was used. The results of overall satisfaction with office space by office type in groups can be seen in Table 5. The results showed that the differences between the groups are non-significant (p=0.581 p>0.05). This result might be due to the finding that most of the employees are working in offices shared with few colleagues and most of them are generally satisfied with the workspace (65.2% see Table 4).

Table 5. Overall satisfaction with the office space by office type

			Overal satisfaction					Total
			Very unsatisfied	Unsatisfied	Neutral	Satisfied	Very satisfied	
Type of office	Individual office	Count	0	0	1	3	1	5
		% within Type of office	0,0%	0,0%	20,0%	60,0%	20,0%	100,0%
	Sharing with colleagues	Count	0	1	20	22	6	49
		% within Type of office	0,0%	2,0%	40,8%	44,9%	12,2%	100,0%
	Open office	Count	1	1	1	11	0	14
		% within Type of office	7,1%	7,1%	7,1%	78,6%	0,0%	100,0%
Total		Count	1	2	22	36	7	68
		% within Type of office	1,5%	2,9%	32,4%	52,9%	10,3%	100,0%

To test the Sub-Hypotheses of Hypothesis 1 and Hypothesis 2 an exploration of the scale of reliability as well as the factor structure of the measures was conducted first. The Cronbach Alpha for the items measuring various aspects of workspace satisfaction was 0.928 which implies that the reliability of the items is satisfactory. The Cronbach Alpha for the items measuring the importance of workspace for job satisfaction was 0.832 which is again an acceptable level and implies that the reliability of the items is satisfactory.

To further analyze the connection of various aspects of the work space with the perception of workspace as a meaningful contributor to overall job satisfaction some of the questions were combined in single variables. Therefore the following variables were created: Satisfaction with storage space

by combining the questions on storage space and location of storage space; Satisfaction with office aesthetics by combining questions on the color of the workspace, the window view, floor covering, office furniture and office layout; Satisfaction with access to co-workers by combining the questions on the location of immediate supervisors and access to colleagues; Satisfaction with meeting spaces by combining the questions on formal meeting space and informal meeting spaces; Satisfaction with the comfort of space by combining the questions on temperature and air quality; Satisfaction with privacy by combining the questions on visual privacy and conversation privacy; Satisfaction with lighting by combining the questions on natural lighting, artificial lighting and overall lighting.

Then ANOVA was performed of the newly created variables: satisfaction with storage space, comfort and privacy as dependent variables and office type as independent variables. The ANOVA results show that there is a significant difference between the satisfaction with the privacy and the office type (p=0.021). The post-hoc test shows that the employees in the single office are more satisfied with their privacy than the employees in the other office types. The complete post-hoc-results results can be found in Table 6. This means that the Hypothesis 1.3 is accepted.

Table 6. ANOVA post-hos results

Dependent Variable	(I) Type of office	(J) Type of office	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Storagespace	Individual office	Sharing with colleagues	,710	,455	,302	(,43)	1,85
		Open office	,500	,505	,615	(,77)	1,77
	Sharing with colleagues	Individual office	(,710)	,455	,302	(1,85)	,43
		Open office	(,210)	,293	,774	(,94)	,52
	Open office	Individual office	(,500)	,505	,615	(1,77)	,77
		Sharing with colleagues	,210	,293	,774	(,52)	,94

Privacy	Individual office	Sharing with colleagues	1,15000*	,4262	,032	,0824	2,2176
		Open office	1,30714*	,47349	,027	,1214	2,4929
	Sharing with colleagues	Individual office	(1,15000)*	,42628	,032	(2,2176)	(,0824)
		Open office	,15714	,27480	,850	(,5311)	,8454
	Open office	Individual office	(1,30714)*	,47349	,027	(2,4929)	(,1214)
		Sharing with colleagues	(,15714)	,27480	,850	(,8454)	,5311
Comfort	Individual office	Sharing with colleagues	,31000	,42958	,772	(,7662)	1,3862
		Open office	,81538	,48196	,246	(,3920)	2,0228
	Sharing with colleagues	Individual office	(,31000)	,42958	,772	(1,3862)	,7662
		Open office	,50538	,28513	,216	(,2089)	1,2197
	Open office	Individual office	(,81538)	,48196	,246	(2,0228)	,3920
		Sharing with colleagues	(,50538)	,28513	,216	(1,2197)	,2089
*. The mean difference is significant at the 0.05 level.							

To test Hypothesis 2 and all the Sub-Hypotheses the level of connection between the previously created variables and the overall satisfaction with the workspace was tested. These variables were treated as predictors of variable workspace satisfaction as a factor of overall job satisfaction derived by combining the questions 'My workspace is a big factor in my overall job satisfaction' and 'My workspace is an attractive aspect of my job'. Bearing in mind that one of the assumptions for running a regression analysis is a satisfactory sample size of having between 15 to 40 participants per variable (Dancey and Reidy, 2004), the sample size of this research was too small for the procedure. Therefore an analysis of the correlation between each of the predictor variables and the variable workspace satisfaction as a factor of overall job satisfaction was conducted. The correlation coefficients can be seen in Table 7.

Table 7. Correlation coefficients

	Workspace satisfaction as a factor of overall job satisfaction	
	Correlation coefficient	p value
Storage space	0.438	0.000
Office aesthetics	0.622	0.000
Access to coworkers	0.536	0.000
Meeting spaces	0.439	0.000
Comfort of the space	0.601	0.000
Privacy	0.416	0.000
Lighting	0.429	0.000

As can be seen from the previous table all correlation coefficients are significant, which means that there is a positive connection between various aspects of the workspace so that workspace is a major contribution to overall job satisfaction. Bearing in mind that there is also a significant correlation between the satisfaction with the workspace and overall job satisfaction ($r=0.594$ $p=0.000$), paying attention to the various aspects of the workspace becomes even more important.

Conclusion and Recommendations

This study is the first study of its kind in the Republic of Macedonia. As such it attempts to serve as a starting point for a deeper and broader exploration of the issues of workspace design and job satisfaction. Despite the limitations of the convenient sampling and the small sample size this study still points out some very important findings that can later be verified by studies using random sampling and a bigger sample size.

To begin with the study found a high level of satisfaction with the various elements of workspace design with some exceptions being the level of privacy, air quality and lighting in the workspaces. There were no differences between the employees working in different types of offices and their overall level of satisfaction with the workspace. However workers in individual offices were more satisfied with their privacy than workers in any other type of office. This is line with the findings by Danielsson (2005). The analysis also shows that different aspects of workspace design are connected with the perception of workspace satisfaction as an important aspect of overall job satisfaction. This is in line with the work of Ornstein (1989). The findings should therefore be carefully considered by the professionals in who design workspaces in

Macedonia, so that they will be in-line with other relevant European and world-wide findings. As such when designing the spaces particular attention should be paid to the level of privacy that a certain workspace offers as that is an important element of satisfaction with the workspace and overall job satisfaction. This body of research recommends that interior designers and managers should explore the possibilities of layout and furniture design in a bid to enhance privacy and the ability to maintain freedom from distraction while concentrating on a work task. This is even more important considering the autonomy required by workers in the ICT sector. The importance of involving employees in decision making with regard to workspace design is paramount, which makes this research important as well.

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