MATERIAL WORK ENVIRONMENT AND WORK COMFORT IN THE OPINIONS OF UNIVERSITY EMPLOYEES

MATERIALNE ŚRODOWISKO PRACY A KOMFORT PRACY W OPINIACH PRACOWNIKÓW UNIWERSYTECKICH

Marzena Syper-Jędrzejak, PhD
Faculty of Management at the University of Lodz, Department of Human Resources Management, Poland
marzena.syper@uni.lodz.pl • ORCID 0000-0003-0559-1332

ABSTRACT

This paper describes factors of material environment that are particularly important for employees comfort on the example of a selected University. The main goal of the presented research was to identify factors of work comfort related to material and social-living conditions of work and their assessment based on the opinion of employees in a selected institution. A two-stage study conducted in 2016–2018 among 440 university employees made it possible to identify factors relevant to the comfort of work, mainly related to material conditions. Based on the opinions of university employees (questionnaires and interviews), problem areas were identified in the scope of shaping comfortable working conditions.

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ABSTRAKT

Niniejsze opracowanie dotyczy czynników środowiska materialnego mających szczególne znaczenie dla komfortu pracy na przykładzie Uniwersytetu X należącej do grupy polskich uczelni publicznych. Podstawowym celem prezentowanych badań była identyfikacja czynników komfortu pracy związanych z materialnymi i socjalno-bytowymi warunkami pracy oraz ich ocena przeprowadzona na podstawie opinii pracowników badanego Uniwersytetu. Dwuetapowe badanie przeprowadzone w latach 2016–2018 wśród 440 pracowników uniwersyteckich pozwoliło określić czynniki istotne dla komfortu pracy, głównie związane z materialnymi warunkami pracy. Na podstawie zebranych opinii pracowników Uniwersytetu (ankiety oraz wywiady) zidentyfikowano obszary problemowe w zakresie kształtowania komfortowych warunków pracy.

Słowa kluczowe: dobrostan pracowniczy, warunki pracy, komfort pracy

Introduction

Professional work is an important element of modern man's life. Thanks to work, a person significantly realizes his/her needs, achieves goals, builds self-esteem and identity. However, it is realized within the framework of an asymmetrical relationship between the employee (individual) and the organization (workplace, institution, etc.), in which the rules of functioning are determined by the organization (Lightning and Werner 2018, p. 47). This situation may become a potential area of conflicts and threats, negatively influencing work comfort.

Comfort, understood as a positive perception of all external conditions that provide comfort to a person (Dictionary of Polish Language, https://sjp.pwn.pl/slowniki/komfort.html), means here the perception of working conditions and the working environment, a sense of existence (positive, pleasant) balance between a person and his environment (Slater, 1986; Vink, 2004). The concept of "working conditions" has so far, both in the theory and practice of economic life, not been strictly defined, but there are numerous classifications of its components (cf. Filipkowski, 1965; Ejdys et al., 2010; Dębski, 2006). Working conditions can therefore be divided into (Polek-Duraj, 2013, p. 153):

- material work environment which includes technical working conditions (machinery, equipment, protective clothing) and physicochemical environment — (lighting, noise, dust, temperature, etc.),
- social and welfare side of the organisation (the condition and type of hygiene and sanitary and living equipment made available to employees),
- working time (length and intensity of duties),
- social relations within an organisation (i.e. overall human relations, management styles, approach to cooperation, circulation of information, etc.).

There are indications that a good assessment of physical (technical and physicochemical) working conditions can translate into the assessment of other aspects of work (Vink, 2004), e.g. perceiving workload as optimal, etc. (Ingvarson et al, 2005; Jóźwiak, 2010, p. 126), and even directly into productivity (Soewardi et al, 2016). This study focuses on the material aspect of the work environment and the social and living environment as key factors responsible for work comfort on the example of a selected organisation.

The aim of this article is to try to relate the concept of work comfort (in terms of the factors of the material environment and the social and living environment that create it) to such a specific organisation as the public university. Comfort connected with working conditions is connected here with various factors resulting from the specific character of the university and its functions : educational, educational, scientific, research, social and cultural-creative ones (Law on Higher Education; Baruk, Goliszek, 2018, p. 4). On one hand, we are dealing with commonly occurring office work — that is, intellectual work, performed mainly in a sitting position — present mainly in the work of university administration and scientific, scientific or didactic workers (CIOP-PIB, 2016). The conditions for performing office work are precisely defined in the applicable national law as regards the space available to such an employee, lighting, air temperature and humidity, acceptable noise standards or dimensions, and the setting of basic elements of equipment (Regulation of the Minister of Labour and Social Policy of 26 September 1997; Regulation of the Minister of Labour and Social Policy of 1

December 1998; Konarska, 2016). On the other hand, the university, fulfilling one of its basic roles, creates workstations for academic teachers — working with an increased voice load and requiring appropriate conditions in teaching rooms (Travers, Cooper, 1997; Gębska et al., 2013). Moreover, within the university, there are organisational units where work involves contact with potentially dangerous, flammable, toxic substances and objects (physical, chemical, medical laboratories, etc.), where strict compliance with health and safety standards is of particular importance.

It should be noted that in the context of environmental working conditions and their impact on employee comfort, researchers' efforts tend to focus on commercial enterprises. There is a lack of research work devoted to work comfort in organisations such as universities or scientific institutions. In the domestic literature, there are papers focusing on teachers' working comfort conditions, but they usually refer to psychosocial factors and in principle mainly concern primary and secondary education institutions (e.g. Pyżalski, Merecz, 2010; Rogowska, 2014; Farnicka et al., 2018). This study is therefore, if only to a narrow extent, an attempt to fill this gap.

Comfort factors in University X
— material and test methods

The basic aim of the presented research was to identify comfort factors and their assessment based on the opinions of the employees of the examined organisation. The subject of the empirical research were material and social and living conditions of work in a selected university, especially in the following aspects:

- proper equipment of the workplace,
- ergonomics of the equipment used,
- ensuring the right physical and chemical conditions in the workplace,
- access to hygiene and sanitary equipment and social rooms,
- "psychological" factors (organization of space, its aesthetics, possibilities of personal influence).

University X was selected for the study as a large organization, employing various groups of employees (representatives of science, didactics, administration, technical services or service), as well as having the financial means to shape comfortable working conditions for the employees. When designing the study, an attempt was made to adjust the form and content of research tools to the specificity of a public institution fulfilling specific functions. Environmental diversity was also taken into account — the institution is located in different buildings of different standards, which allows us to guess the related differences in working comfort.

The research was conducted in two stages. In the first stage the survey method was used. The research tool was an original questionnaire, which collected information on, among other things, the respondents' discernment in the activities offered to them to support employee welfare at work and the assessment of the employer's efforts in this respect. The interviewees were deliberately selected in such a way as to obtain the greatest possible variety of respondents (in terms of gender, age, seniority or position type).

The survey was conducted in October–November 2016, obtaining 393 completed questionnaires. The second stage of the survey was carried out between April and July 2018 in the form of interviews conducted directly with employees of institution X. A total of 49 partially structured and non-standardized interviews were conducted (Kostera 2005). In total, 440 employees of the University X[1] took part in both parts of the study. Further on, the results of the survey are presented as well as conclusions and observations from the conducted face-to-face interviews, and selected statements of University employees are quoted.

The survey was attended by 226 women and 167 men. In terms of the respondents' age, the most numerous group were people in the age categories 41–60 (43% of the survey participants) and 31–40 (36%), followed by the youngest employees aged 21–30 (11% of the survey participants), while people over 61 years of age accounted for 10% of this group of respondents. As far as seniority is concerned — in the survey took part mainly experienced employees, employed at University X for over 11 years (54%); or between 2 and 10 years (39%), only 7% of participants were relatively short employed — under 2 years. Most of them were academic

teachers, research or teaching staff (68% of the survey participants) and administrative staff (22%). Service and technical service employees constituted 10% of the participants in this stage of research.

In turn, 25 men and 24 women took part in the interviews; 33% of them were interlocutors aged 41–50, 31% were employees aged 31–40, 18% of the participants were people aged 51-60, 14% of the interlocutors represented the 21–30 age group and 4% were people over 61. The most numerous group of interviewees were respondents with 2–10 years of university work experience (45%) and longer (35%). The interviewees employed at University X under 2 years of age constituted 20%. As for the structure of the respondents in terms of job groups, similarly to the questionnaire part, the most numerous group were research and teaching staff (49%), followed by administration (31%), and technical and service staff (20%).

## Selected factors of work comfort in the examined institution — research results

Material conditions of the workplace (equipment, ergonomics, physical and chemical conditions)

The proper equipment and organization of the working environment is one of the employer's obligations and at the same time constitutes the basis for good functioning of an employee in the workplace (Regulation of the Minister of Labour and Social Policy of 26 September 1997). In this sense, proper organization of the material work environment is necessary (although it is at the same time an insufficient condition) to ensure comfort of work. Respondents taking part in the survey were asked questions on how they evaluate the efforts of the employer in this respect. Due to the vastness of the subject matter, the focus was on selected factors which, in the author's opinion, are of key importance for work comfort understood in this way (as they directly affect the employee's body during everyday work, and negligence in this respect is perceived as particularly acute and uncomfortable). These were questions about the proper setting of the basic work tool (company computer or other devices), the possibility of adjusting the chair or other seat and selected

physicochemical aspects.

The above aspects seem to play a special role in the case of people spending a long time at work in an uncomfortable or forced position — and more than 54% of respondents declared that their work requires it. To some extent, this is determined by the type of position in which the respondents were employed at University X (Figure 1). Scientific or scientific-educational employees (39%), technical and service employees (63%) more often marked the answer "rather no", as opposed to administration employees ("rather yes" was 37%, and "definitely yes" 31%). These correlations are statistically significant (Chi^2 = 22.885; df = 6; p = 0.001). It therefore seems that it is administrative workers who are particularly vulnerable to the nuisance of working in a forced or uncomfortable position over long periods of time, which raises further questions about how to minimise potential risks in such positions.

Figure 1. **Long lasting, unconfortable position at work and type of position**
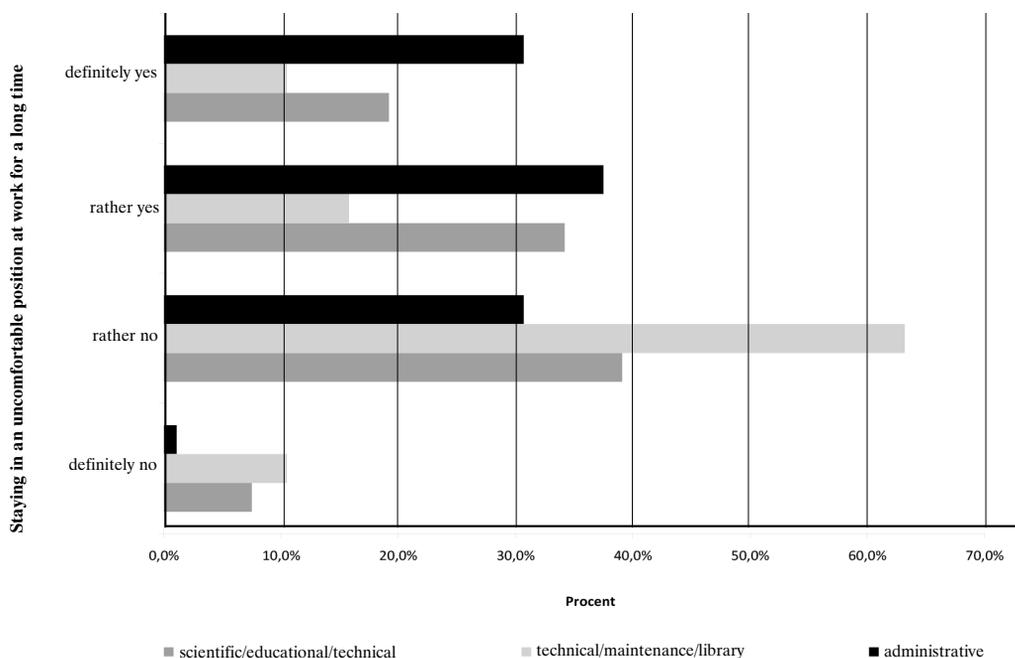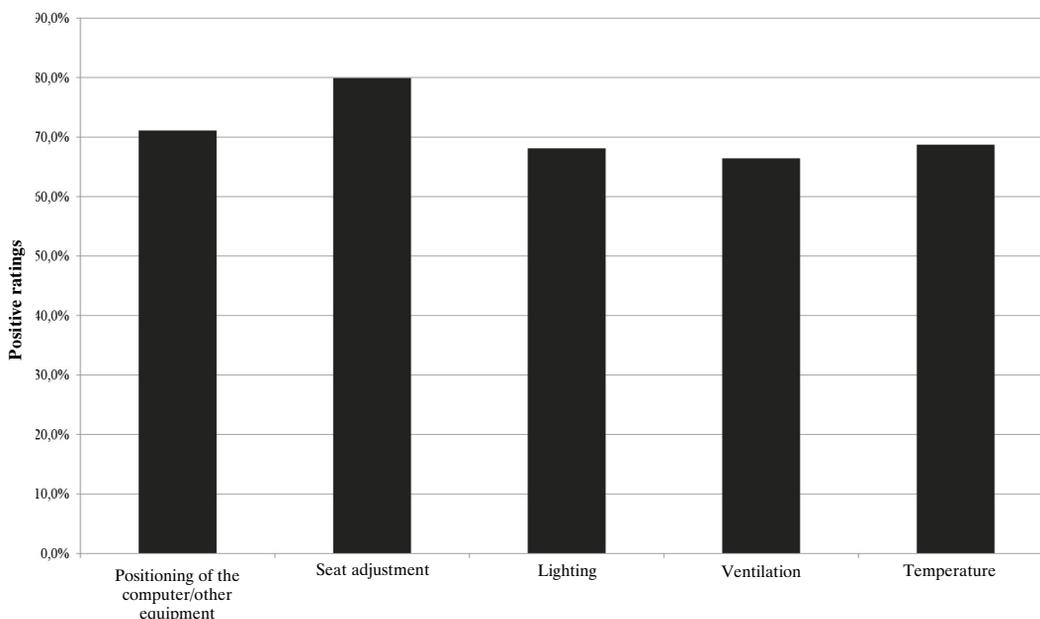

Source: own elaboration based on the conducted research.

The employees of the university in question have also expressed their opinion in surveys on how they evaluate such issues as

- the positioning of the chair at the desk/daily workplace,
- lighting,
- ventilation,
- the temperature in the workplace.

The aggregate results of this assessment are presented in Figure 2. The surveyed employees rated relatively highest the possibility of adjusting the armchair or other seat at their workplace (almost 80% of the positive ratings), while the lowest rating was given to the ventilation of the work premises.

Figure 2. **Selected aspects of the material environment in the opinion of the surveyed employees of University X**

Source: own elaboration based on the conducted research.

During the second stage of the research, direct interviews with employees focused on the factors of the material environment, which in the opinion of the interviewees significantly influenced the comfort of everyday work.[2] It was an attempt to deepen the data obtained in the first stage of research and to give some importance to particular comfort factors.

And so, in the opinion of the employees participating in the interviews, the comfort of work is primarily determined by the broadly understood equipment of the workplace. Depending on the position held and the specifics of the work, employees pointed out various aspects of this equipment: from a computer with access to the Internet and applications needed for work, to specialist laboratory tools. As far as other elements of equipment are concerned, e.g. consumables (e.g. often referred to as "paper-printers"), the interlocutors emphasized that they are provided, or rather assured, in the organisation employing them.

Secondly, as a factor of comfort, the important role of a comfortable seat/table, desks and tables tailored to the needs of employees was pointed out, as well as the possibility of adjusting, moving and arranging the space "on your own". This is connected with a common belief among the respondents that the comfort of work is significantly influenced by having one's own place at work, which in practice usually meant one's own desk with equipment:

It is important that each employee has his/her own computer on their desk, and their ownplace. This is not always the case, sometimes we have to share a computer with a colleague, it is necessary but uncomfortable...
(Lecturer, 29.06.2018)

First of all, space is important, and whether there is not too much density of employees, this space is mine — this is important for me and for my employees, too. We have recently moved from one location to another and from this point of view we also analyzed the current rooms — whether the space will be large, relatively independent... Now I do not have an independent office, but it is quite deliberately, in this way I arrange the flow of information.
(Administrative employee, managerial position, 23.05.2018)

Physicochemical aspects of the workplace as creating work comfort were also quite often cited by the interviewees, with most of the respondents assessing them rather positively at their workplace (which is consistent with the survey results).

Lighting, especially access to daylight, was cited as a very important aspect of work comfort in the interviews. Some employees complained about its deficiency (working in "blind" rooms, located inside the building, without windows), there were also employees who commented on the lack of possibility to adjust the excess of daylight in the room (no blinds/roller blinds in windows, especially those with southern exposure):

If you think about it, it's a serious problem. When I stay in my room for a longer time and it's a sunny day, all the sun comes into my room, it's impossible to work, it's so hot, the blinds don't make up for it, the light is reflected in my laptop screen... I have this comfort that I have the opportunity to go down to the library with my laptop and use the place there, work when it is impossible to work in my room. What if there wasn't this library, this quiet corner to work in? I'd probably take work home, but it is not always possible...
(Lecturer, 17.07.2018)

The ventilation of rooms was also pointed out as important for work comfort — here there were a lot of reservations concerning insufficient ventilation of the work rooms (e.g. faulty and inefficient exhaust fumes, spreading smells from the canteen in the building, etc.):

I reserve the right not to talk about air conditioning, but about ventilation, because it varied in the previous workplace. At work, the chemist, proper ventilation is essential. For the people working in our unit, the most important thing is the efficient exhaust system. I am now comparing in my mind the working conditions now and in the previous, old building and you can say that here we have comfort.
(Technical Officer, 12.07.2018)

Social and economic factors

The research also addresses the issue of social and living factors[3] and their impact on comfort in the workplace. The employer is obliged to provide employees with hygienic and sanitary facilities and equipment, the type, number and size of which should be adjusted to the number of employees, technologies and types of work used and conditions under which this work is performed (Regulation of the Minister of Labour and Social Policy of 26 September 1997). These regulations apply to rooms such as: cloakrooms, washrooms, room with showers, toilets, smoking rooms, dining rooms (except for canteens), rooms for resting, rooms for heating employees and room for storing working or protective clothing, etc. The rooms should be kept in a condition which ensures safe and hygienic working conditions.

Both the employees participating in the first stage of the research (respondents) and the participants of the interviews assessed the social and living sphere as good or very good. This assessment refers especially to the availability of toilets at the workplace (possible comments made in the interviews refer to cases of unfortunate location of the workplace away from the toilets, which requires employees to travel a considerable distance) and cloakrooms. The presence (and, as can be inferred, the functionality) in the buildings of the workstorage facilities for clothing and work tools was particularly highlighted by the service and technical staff who were most affected by these issues:

Health and safety standards are maintained, there are cabinets, procedures, safeguards. This is now very much being taken care of and here I can say with conviction that the company takes care of it. A dozen years ago, when we were still working in the old building, it was completely different, now it would be unthinkable.
(Service worker, 23.05.2018)

Another area of work comfort factors related to the social and welfare sphere, considered important by the respondents, is the access of employees to social facilities (understood as a place where they can rest, regenerate, possibly eat a meal, leave personal belongings, etc.). In individual organizational units of the institution under study there were officially dedicated social rooms (functioning in some units under the name of

employee kitchens or dining rooms). However, their functionality was questionable since only 36% of the surveyed employees confirmed that in the workplace they have access to a place where they can rest, regenerate, possibly eat a meal or leave personal belongings. There were no statistically significant differences in terms of the type of position or length of service, so the problem is noticeable for very different groups employed in the institution.[4] The issue of the social place and its functionality in the described organization was addressed in the interviews. The interviewees indicated the following explanations for the lack of functionality of existing social rooms:

- lack of appropriate equipment (an empty room, which is officially a "dining room" or "kitchen"),
- Location: long distance from the workplace, need to climb stairs, etc,
- no habit of going out for meals or resting outside one's workplace ("eating at a desk"),
- no time to use these facilities.

Anyway, there is a huge revolution going on here, they are moving us, my institute is still in its old place... but there are plans to set up secretarial centres to serve whole, huge institutes. Then 2-3 of such secretaries work in a room, and a social room is meant for such a centre. However, for the time being this is not the case, although there are places where such rooms and corners are. I don't think I would have time to go there, I have a job so arranged that I simply don't have time to go out for dinner, I am lucky if I manage to eat a sandwich brought from home.
(An administration employee, 30.05.2018)

The results obtained (survey results and statements of employees from interviews) suggest that a large group of employees of the institution in question do not have comfortable rest or eating conditions at work. However, this is not an unambiguous assessment, as there was a group of interviewees who were able to indicate such a room at their workplace (especially employees of the central unit and units located in newly opened, modern buildings, equipped with buffets or canteens).

In the opinion of the interviewees, the social and living facilities are associated with the location in the space of such facilities, which is not

indifferent to work comfort. For the interviewees, it was important to place their workplace in the organizational space, the distance from toilets, passageways, elevators, staircases, "patio" type space — which had a direct impact on congestion and noise generated in the surroundings. These conclusions were formulated especially by employees employed in units performing didactic or general functions (e.g. libraries). The same was true of the spatial design of toilets, kitchens, social or recreational rooms.

Summary

The literature indicates that employee comfort is reflected in employee attitudes, and thus in satisfaction and commitment, indirectly favouring productivity growth and profit generation (Ölcer, Florescu, 2015; Bodak, 2017, p. 48). Among other things, this means that special attention is now increasingly being paid to ensuring a high quality of working environment, through the proper design of office space, for example. A tendency can be observed to increase the proportion of daylight to illuminate the working space, to provide natural ventilation in the building, to protect against overheating in the summer, and to give users control over the internal environment conditions of the organisation (Midor, Evening, 2016, p. 435; Butters, 2011). There is a growing awareness of the importance of shaping an employee-friendly workspace with an infrastructure that meets various needs — also the need for relaxation, integration with co-users (Midor, Wieczorek, 2016, p. 436) or the need to stay in a space that meets aesthetic tastes. This seems to be important especially in the case of creative, highly qualified employees with a high degree of self-awareness — and such features are associated with university employees (Paris, 2019; Nnadozie et al., 2019).

Analyzing the research material obtained at University X, it can be concluded that especially the sphere of material and physicochemical environment is significant for the respondents in the context of building work comfort.

In general, the employer's care for ensuring proper working conditions (in terms of environmental conditions) was assessed by the surveyed employees quite well. Only 21% of the respondents gave a negative opinion in this respect to the authorities of the institution in question. More than 58% of the

respondents claimed that the employer rather cares about ensuring proper working conditions, while 21% expressed a firm belief that it is so. There were no statistically significant differences with regard to gender, age or job type of respondents.[5] At the same time, the respondents (especially university staff participating in the second part of the survey — in interviews) indicated shortcomings, of which these were the most frequent ones:

- non-functionality of social rooms,
- problems with proper room ventilation,
- insufficient possibility of arranging/transforming their workstations.

The interviewees, when asked about the most important factors of work comfort, indicated first of all the equipment of the workplace, further on the physicochemical conditions prevailing at work and the social and welfare sphere, understood as access to hygienic and sanitary facilities and social rooms.

The specificity of the institution under study, its tasks, combined with high autonomy of individual units, often physically distant from each other and located in buildings of different standards, makes it difficult to make generalisations as regards the results obtained, which is undoubtedly a limitation of this study. However, it can be stated that some of the needs or remarks indicated by the surveyed persons, e.g. concerning the comfort of office work, may be more universal in nature and serve as valuable guidelines not only for the management of the University selected for research. An attempt to broaden and at the same time deepen research issues (perhaps complementing them with psychosocial aspects) and to compare the results obtained from University X with another university may be an emerging direction of further research.

Footnotes

[1] Two people declared to participate in the survey and in-depth interviews at the same time.

[2] The opinions relate to different buildings of the examined organization, which differ significantly in standard — in terms of equipment, aesthetics or functionality of rooms intended for employees.

[3] In the sense of providing employees with hygienic and sanitary facilities and equipment.

[4] There are no statistically significant differences in Pearson's Chi^2 test between the declared access to social rooms and such variables as length of service or type of position of respondents.

[5] There are no statistically significant differences in the Pearson's Chi^2 test between the assessment of the employer's efforts to provide appropriate working conditions and such variables as length of service or type of position of respondents.

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Marzena Syper-Jędrzejak, PhD, University of Lodz, Poland — Assistant Professor at the Department of Human Resources Management, Faculty of Management, University of Lodz. Her research interests include work-life balance, corporate wellness and stress prevention in management.