

Executive development, commitment to the organization and psychosocial risks in virtual work

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In the new policy framework on the use of work and personal time, teleworking arises as a measure of the modernization and rationalization of the work times. It offers employees more flexibility in the performance of their tasks, without reducing the productivity and quality of the work or affecting their remuneration.

In this article, the impact that the different types of leadership have on employees' psychosocial risk exposure in virtual environments is analyzed. It is done by using data from a university that has an organizational model implemented based on telework.

The relationship between these leadership style variables and psychosocial risk exposure were analyzed as a starting point to design a training activity to provide managers with the skills required to positively lead in virtual work environments.

INTRODUCTION

In 2012, in Spain, 22 percent of the companies with 10 or more workers declared having employees who regularly worked outside of the company premises (at least half of the weekly working time). The employees connected to the company's information and communication technology (ICT) systems through external telematic networks. This information means there are twice as many companies as in 2006. It also exemplifies the drastic change that has taken place in the work place over the last decade. Because of the development of the ICTs, interpersonal communication and the exchange of information has been freed from the constraints of time and space. Computers and other technologies make it possible for a good part of the occupational activity to be done from any location, outside of the organization's premises, or at any time, outside of the established work hours. This leads to what is called virtual work, distributed work or telework.

Virtual work has noticeably attracted both academic and professional attention due to its many benefits to society, organizations and people. From the social viewpoint, virtual work favors the environment thanks to a lower energy consumption and a lower emission of pollutants due to the absence of commuting to the place of work. It can reduce rural migration and it facilitates labor integration of people with disabilities. From the business viewpoint, it offers the benefits of improved productivity, employee retention and organizational performance [1]. For the employee, virtual work improves his/her perceived independence, it facilitates a balance between his/her personal and work life, it improves work satisfaction and decreases the stress of the position [2]. In the first stages of the study on virtual work, it was treated as a dichotomous variable: the researchers simply distinguished between two possibilities, virtual work and onsite work, or face to face work. However, more recently it was observed that this simple characterization overlooks a variety of more complex dimensions that generate different degrees of virtuality, such as geographic dispersion and the level of use of the ICTs. Depending on these dimensions, different levels of virtuality are deployed in the organizations, even for the same work position, which affect both the efficiency of management's action and the working conditions.

RISK FACTORS IN VIRTUAL WORK

From the labor risk prevention viewpoint, virtual work represents a challenge. Firstly, it is considered to be an improvement to the work organization method, which promotes occupational health. Moreover, it can lead to risk situations to be considered, both at the ergonomic level (work position design and its environmental conditions) and legal level (such as the difficulty in determining the occupational nature of an accident that occurs at home or in the area from which the employee undertakes his/her virtual activity). It can also lead to a wide range of important psychosocial risk factors. In the psychosocial environment, various reports indicate that virtual work can lead to problems derived from social isolation, excessive work hours, reduction in support by the organization, obstacles in supervising/controlling this work, etc. Therefore, to optimize the use of virtual work, it is necessary to provide tools that make it possible to minimize the impact of these risk factors.

The majority of the studies published on preventing occupational risks in virtual work environments focused on identifying what the main risk factors are, as well as the processes that affect the health of the employees [3] [4]. However, there are very few references for designing effective interventions. This scarcity of work is likely due, in part, to the difficulty of developing interventions specifically aimed at virtual employees and at properly evaluating their efficiency [5] [6].



Psychosocial types of risks are considered emerging risks. This means that it is occurring in many already existing cases, but has only become relevant in recent years. The emerging risks are often the result of employment trends that have undergone considerable changes, and in those in which the balance between work and a personal life plays an important role. In this respect, there are limited references focused on the psychosocial types of risks associated with virtual work.

LEADERSHIP AND PREVENTION

An increasing but still small number of authors have suggested that leadership has an important influence over employee well-being [7], up to the point that almost all of the resulting variables in the field of occupational health psychology are empirically related to organizational leadership. It is worthwhile to stress, in this sense, that in 2012-2013 even the European Agency for Safety and Health at Work has started up a campaign to promote management leadership and employee participation in the area of safety and health in the workplace.

Leadership is understood to be the combination of the two main meanings of the term: the formal role of the manager designated in the organizational chart and the capacity for social influence that any person is able to develop (whether or not occupying a management position). Leadership is thus defined as the process of social influence that is carried out by people who occupy formal leadership roles in the organizations. This means that the role of the formal leaders (supervisors or managers), when implementing their influential action over the virtual employees, who depend directly on them.

The behaviors of the supervisors that specifically promote and develop a safe work environment make up what is called “preventive leadership.” According to the reviewed sources, transformational leadership is positively related to employees’ perceptions of the safety environment, while leadership behavior is specifically focused on prevention. In particular, transformational preventive leadership seems to offer excellent results.

There is an abundance of empirical literature that relates leadership quality (or lack thereof) to employees’ well-being (or health problems). For example, a transformational leadership style seems to improve the significance given to the work by the employee, the psychological indicators of well-being, cardiovascular health, the participation of employees with regard to occupational health and safety, etc. Therefore, training managers improves their prevention leadership quality, in order to improve the well-being of the employees.

However, training managers has just received attention in the literature as an intervention itself for the prevention of occupational risks. One possible reason for this is the difficulty of evaluating the effectiveness of training in general, and even more so for managers, given that the effects can be indirect and appear to be delayed.

Management action impacts the health and well-being of employees through the safety environment. The safety environment is understood to be one of the components of the organizational environment that is related to the shared perceptions of a group on the policies, practices and procedures related to workplace health and safety. For more than 30 years, research on safety environment has accumulated evidence on the relationship between the safety environment and the results and preventive behaviors. Its relationship with stress and psychosocial health has been demonstrated in detail.

Finally, regarding the impact of management development on the commitment to the organization of virtual employees, and their relationship to the changes in the psychosocial risk factors, there are several studies that suggest a correlation between management’s commitment to occupational risk prevention and desirable indicators for the organization, such as commitment to the organization or absenteeism [8], in general. However, few of those are focused on virtual employees, a group with a small presence in Spain, yet as the aforementioned data indicates, it is becoming an ever more important percentage of the society.



A STUDY ON LEADERSHIP, PSYCHOSOCIAL RISK AND VIRTUAL WORK

The results displayed below are from a study funded by Fundació MAPFRE on the link between leadership styles and psychosocial risk in virtual work environments. The empirical work was focused on an on-line university, but it is applicable to any organization that uses virtual work in its daily activities.

The main objectives of this project were:

1. To compare the psychosocial risk factors and the commitment to the organization of virtual employees with respect to on-site employees.
1. To analyze the relationship between preventive leadership style, the safety environment, the psychosocial risks, and the commitment to the organization of virtual employees.
2. To analyze the role of the degree of virtuality on the relationship between preventive leadership style and the safety environment, the psychosocial risks and the commitment to the organization of the virtual employees.

METHODOLOGY

The methodology chosen combined quantitative and qualitative strategies. A survey was first given to all personnel (approximately 40 percent participation, 250 responses) of the online university on their position regarding the study variables considered. This questionnaire starts by requesting personal information from the participants, which will make it possible to analyze the subsequent information by groups, based on different reference variables. The identifying factors of the group are the following:

- Time with the organization.
- Are you part of the academic area or the management area?
 - If you are part of the academic area, which faculty are you in?
 - If you work in management, which area are you in?
- Are you in charge of personnel? How many personnel?
- Do you telework? What percentage?

Information is requested below on the four variables subject to study for this project, following the validated questionnaires below:

1. **Direct manager leadership style.** The Multifactor leadership questionnaire (form 5x-short), Rater form, one the most used tools both in leadership and management development research, was used.
2. **Exposure to psychosocial risks.** If there is psychosocial risk exposure, the reduced version of the “Workplace psychosocial risk evaluation questionnaire” (PSQ CAT21 COPSOQ) was used, the version in Catalan is from the Generalitat de Catalunya.
3. **Commitment to the organization.** The Meyer and Allen (1997) scale of three components was simplified [9], eliminating the standard commitment component given its overlap with the affective commitment component.

4. Psychosocial safety environment. To measure the psychosocial safety environment, the PSC-12 questionnaire [10], was used. It questions employees on the values and attitudes that senior management displays in their attention and practices related to the psychosocial well-being of employees.

The resulting information from the questionnaires complemented the creation of focus groups and the performance of individual interviews.

Two types of focus groups were created, one for organization members who are not in charge of personnel, considering a total of six groups differentiated by the virtual work percentage that they perform, and depending on if they are part of the management area of the university, or of the teaching staff. When forming the different groups of employees, the heterogeneity of gender, the section/department in which the work is undertaken and the reasons for which the virtual work is undertaken were maintained, as much as possible. In Table 1 the questions asked on the revitalization of the different focus groups were presented to organization personnel without a manager.

Table 1. Question guide for the organization personnel *focus groups* (not managers)

1	How do you do your virtual work? <input checked="" type="checkbox"/> What is the schedule? What routine do you follow? <input checked="" type="checkbox"/> Where will you be teleworking? What is your work space like? <input checked="" type="checkbox"/> Do you have interruptions due to teleworking?
2	Which criteria is used to determine the percentage of telework that you will do? Why is that?
3	What are positive and negative aspects associated with your teleworking experience?
4	Have you had any organizational problem or is there anything harder to do in your work because of teleworking (you or other people)?
5	What technologies have you used and which have caused discomfort during the development of your telework, or that of other people?
6	Regarding your hierarchical supervisors, what feeling have you had when requesting to telework? Have they been receptive?
7	Do you have any kind of objectives or any specific monitoring mechanism due to teleworking?
8	Is there any pattern that you do differently in your work due to teleworking? Are there specific tasks that you reserve for teleworking?
9	What is the impact of teleworking on productivity?
10	What is the impact of teleworking on stress? Do you have any other contributions that aren't included in the guidelines?

Also, focus groups were made with the intermediate managers of the management area, called operative group managers in the organization. These groups, managed the same way as the previous groups, have made it possible to continue with the study on the implications of the virtual work model and to understand the situation of the managers vertically downward (how they perceive the personnel in their charge who are not present in the installations) and upward (how their higher managers perceive the work done by them in on-site and virtual situations) situations.

Table 2. Question guide for the intermediate manager *focus groups* and interviews with managers from the area or from studies

1	<p>How is teleworking done in your area (or operating group)?</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> How is teleworking organized in your area: limits, guidelines, tracking, etc? <input checked="" type="checkbox"/> What criteria was followed to validate the percentage of telework? <input checked="" type="checkbox"/> What activities are mostly developed asynchronously? <input checked="" type="checkbox"/> Are there differences between the telework requested and the telework validated? <input checked="" type="checkbox"/> Have you noticed technological accessibility problems?
2	<p>What impact has teleworking had on the team organization?</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Are there difficulties in organizing area meetings? <input checked="" type="checkbox"/> The relationship level between colleagues, with a special impact on the job sharing? <input checked="" type="checkbox"/> Have you had to make changes in the team organization? <input checked="" type="checkbox"/> Have you postponed or stopped performing group tasks due to teleworking? <input checked="" type="checkbox"/> Is it easy for you to contact teleworkers who are not on-site? <input checked="" type="checkbox"/> Have you received feedback from your client? Have you noticed changes? <input checked="" type="checkbox"/> Do you feel comfortable managing people asynchronously?
3	<p>What impact has teleworking had on the activity of your area?</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Level of achievement: Do you consider the activity to have changed? <input checked="" type="checkbox"/> Have you taken measures to adjust activities to teleworking?
4	<p>Did you spoke with your collaborators about teleworking once your initial petition was validated? If yes: What did you say?</p>
5	<p>What impact has teleworking had on the employees who telework? And on those who do not telework?</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> What was their level of commitment to the group, in the achievement of goals? <input checked="" type="checkbox"/> What positive and/or negative impacts have you had in transferring employees?
6	<p>Only for intermediate managers, what evaluation has your manager given teleworking?</p>
7	<p>Is there any personal evaluation that you would like to add?</p>

In this case a total of 10 focus groups were made, corresponding to the different areas in which the operational groups are encompassed.

Finally, with the objective of obtaining a more complete vision, individual interviews were undertaken with the managers of the area, for management, and with the study directors, for the teaching staff. This involved a total of 15 interviews.

In Table 2 the questions asked on the revitalization of the different focus groups were presented to the intermediate managers of the organization, as well as to the managers of the management and study area.

The main results of the psychosocial risk exposure and organizational leadership model are displayed below.

ON EXPOSURE TO PSYCHOSOCIAL RISKS

Of the six aspects that were analyzed (1. Psychological requirements, 2. Control over the work, 3. Uncertain future, 4. Social support and leadership quality, 5. Double presence, and 6. Respect), it was considered that 2, 4 and 5 are those that bear a greater relationship to the subject of the study conducted. The main results obtained are detailed below. The analysis was undertaken on three levels: overall organization and, separately, the management area and academic area, since these two groups present characteristics pertaining to the organization and operation.

At the overall level of the organization, in terms of control over the work (dimension 2), it is observed that the organization takes the employee's opinion into consideration on the assignment of the workload, in which 48 percent respond that this occurs "often" or "always," as well as on the task performance order (68.6 percent) and when to take rest periods (82.4 percent). Therefore, it can be concluded that there is a high level of autonomy in organizing the work, a very important aspect in an institution that has an organization teleworking model implemented. In this same scope, it is observed that 86.1 percent (often or always) consider that their work requires initiative, and 71.1 percent that makes it possible to learn new things.

It is then concluded that autonomy and the decision making ability of the employees prevails with a self-training component and the making of important decisions. This point is important from the leadership viewpoint established in the organization, based on the transfer of responsibility to the different hierarchal levels.

It must also be mentioned that 72.5 percent (often or always) recognize that the organization speaking with enthusiasm to other people indicates a high level of involvement and feeling of belonging.

By groups (management and academic areas), it is observed that, in general, the results of different questions asked to the group of teaching staff are substantially better. This result is not surprising given that its autonomy is high and clearly differentiates the type of activity undertaken while teleworking. However, for the personnel of the management area it is by means low, which results in the affirmation that the organization has a high level of control over the work.

Another aspect subject to study is “social support” and “leadership quality” (dimension 4). At the level of the overall results, it was observed that the majority of the workers clearly know (often or always) the margin of autonomy over the work and tasks for which they are responsible, 78.9 percent and 79.3 percent, respectively. In this scope, another important factor for the subject of study refers to the support received by colleagues and upper managers. In these cases the results (often or always) were 76.9 percent and 70.6 percent, respectively.

By groups, in this case an improved result is observed for the management area, an aspect associated with working in groups and not individually as the work of the teaching staff. In this respect, it also indicated that teleworking favors individual work but does not considerably affect the feeling of belonging to the organization.

The third aspect analyzed corresponds to “double presence” (dimension 5). In this case the results displayed a slight negative tendency, i.e., we found that there is overlapping between the domestic and familiar tasks and those associated with the work. An aspect that minimally improves with the implementation of telework.

It can also indicate, at the overall level, that workers included in a teleworking model, in general, present less psychosocial risk exposure, especially in the teaching staff group. Likewise, the best results, in terms of psychosocial exposure, are found for a percentage of telework comprising between 25 and 50 percent of teleworking, which indicates that there is an optimal percentage. This can be interpreted as low percentages not being perceived as telework, and the very high percentages implying some disaffection. This situation is more marked for the management area, in which the telework percentage is more regulated.

ON ORGANIZATIONAL LEADERSHIP

The leadership style of managers was classified into three types, following the classification proposed by Bass and Riggio (2006) [11]: transformational (or transformative), transactional and passive or “laissez faire.” In transformational leadership, the leader motivates his/her followers, inspiring them, establishing challenges and favoring their personal development. Transformational leadership promotes high-level group achievements through a sense of purpose, a mission and a common vision. The second leadership style is transactional, in which the leader motivates his/her followers through specific benefits whenever they are able to carry out the tasks assigned to them. The transactional style entails negotiation between the leader and the subordinates. Lastly, in the passive style the leader rejects any form of control and allows his/her subordinates to make all of the decisions. The transformational style is considered in the literature to be the most desirable. However, the transactional style has also had positive results and will therefore also be considered as a positive style. Furthermore, the passive style will be considered as a negative or undesirable style throughout this study.

Male employees generally indicated that their direct managers presented a more transactional and passive style, compared to the evaluations provided by female employees. Moreover, the teaching staff considered that their managers more frequently presented all leadership styles, including the positive (transformational, transitional) and the negative (passive) styles, than the personnel in management or administrative activities (see Tables 3 and 4).

Table 3: Effect of the employee's gender on the leadership model

Employee gender	Female	Male	Total
Transformational leadership	2.47	2.48	2.48
Transactional leadership	1.98	2.18	2.06
Passive leadership	1.03	1.21	1.10

Table 4: Effect of the work area on the leadership model

Employee gender	Academic	Management	Total
Transformational leadership	2.66	2.38	2.48
Transactional leadership	2.16	2.18	2.06
Passive leadership	1.15	1.08	1.10

Moreover, the leadership style of direct female managers is more favorably perceived than the style of male managers. These results are consistent with published studies for other contexts [12].

The percentage of telework that an employee does appears to be related to the leadership style that he/she perceives in his/her direct superior. However, this relationship is not linear, but fluctuates depending on the intensity of the telework undertaken, as shown in Table 5.

Table 5: Effect of the telework percentage on the leadership model

Telework percentage	0%	>25%	26-50%	<50%	Total
Transformational Leadership	2.40	2.50	2.45	2.69	2.48
Transactional Leadership	2.02	2.13	2.02	2.07	2.06
Passive Leadership	1.16	1.05	1.10	1.11	1.10

Employees that do not telework are thus generally those who give the worst evaluation on the management style of their superiors, assigning lower scores to the more favorable styles and higher scores to the passive style. By comparison, the employees that telework most (>50 percent) gave a more transformational and somewhat more transactional score to their managers, and gave them a less passive score. The employees with a low amount of telework (<25 percent) gave a score that was clearly more transactional and somewhat more transformational to their managers, and gave them a less passive score. Employees that telework 26-50 percent of the time are in an intermediate situation.

Other key variables of this study also change depending on the percentage of telework, as shown in Table 6.

Table 6: Effect of the telework percentage on the psychosocial environment and commitment to the organization

Telework percentage	0%	>25%	26-50%	<50%	Total
Psychosocial environment	2.67	2.69	2.74	2.95	2.72
Commitment to the organization	9.52	9.95	10.07	9.80	9.84

The psychosocial safety environment increases in accordance with the intensity of telework, in such a way that employees always on-site are those with the worst perception of the policy, practices and procedures related to safety and psychosocial health in the workplace. By comparison, employees who telework for more than 50 percent of the workday provide a clearly superior evaluation.

Commitment to the organization, however, follows an inverted U-shaped curve, increasing as the percentage of telework increases. This displays a significant drop in the commitment to the organization of employees, with more than 50 percent of their workday spent teleworking.

RELATIONSHIP BETWEEN ORGANIZATIONAL LEADERSHIP AND EXPOSURE TO PSYCHOSOCIAL RISKS

The transformational leadership style is significantly and positively correlated to the psychosocial safety environment, control, clarity of the role and respect. When the correlation is negative (although with a minor effect) it is related to psychological demands and insecurity (see Table 7 on the correlation analysis results).

Table 7: Correlation between the organizational leadership model and psychosocial risk exposure variables

	Transformational Leadership	Transactional Leadership	Passive Leadership
Psychosocial environment	.313**	.178**	-.158**
Psychological requirements	-.103*	-.028	.161**
Control	.355**	.162**	-.096*
Insecurity	-.173**	-.068	.101*
Role clarity	.287**	.206**	-.206**
Respect	.506**	.320**	-.209**

* The correlation is significant at a level of 0.05 (bilateral)

** The correlation is significant at a level of 0.01 (bilateral)

Transactional leadership shows the same tendency, but the correlations are much weaker, and are not significant for the negative factors. By comparison, passive leadership is clearly correlated with the most unfavorable work conditions: worse psychosocial environment, less control, less role clarity and a lesser perception of respect, together with greater psychological demands and insecurity.

Even though it has only been possible to obtain simultaneous information for now, and therefore causality cannot be concluded since the leadership style leads to psychosocial factors, the correlations obtained are completely in line with the research that is available so far. This suggests that the research is aimed at improving the leadership style to direct it toward other transformational styles that can lead to an improvement in psychosocial risk factors.

OTHER RESULTS

The results mentioned up to now are seen as complementary to the information obtained from the different interviews and the focus groups. These complementary contributions are the following:

1. The process followed in this university to offer the virtual work option to employees is considered a success factor, specifically: the evaluation of teleworkers' skills, the preliminary analysis of the potential psychosocial risks of the organizational model, the analysis of the tasks to be undertaken during the virtual work period, and training in the skills required for teleworking.
2. The improved adjustment to the telework situation is a direct consequence of the training undertaken to improve the key skills for virtual work. This is in addition to a good balance between the skills and the demands of the work position, which implies a lesser possibility of psychosocial risks appearing.
3. Employees confirm that, although the workload occasionally increased, the feeling of being overloaded is less, which may lead to an increase in productivity. This improvement is associated with the ability to self-manage work time, the lack of interruptions during work time, as well as choosing the work station.
4. The planning and prior analysis of the virtual work model by managers is considered to be a key factor in the implementation and success of the provision of services, both at the productive and guarantee levels.
5. The general evaluation is very positive, mainly due to the improvement in the balance between personal life and professional life. The main factors indicated are: a reduction in commuting, an increase in personal time, financial savings, etc. These are factors that favor a reduction in the level of stress.

CONCLUSIONS

When studying leadership in university contexts, it is necessary to distinguish between academic personnel (teaching staff) and management personnel (administration and services), given that the results are significantly different in these groups.

Employees who are always on-site appear to hold the most negative evaluations on the different key aspects for the functioning of an organization: the leadership quality of their superiors, psychosocial safety environment and commitment to the organization.

The percentage of telework is related to the leadership style perceived in the direct manager. Even though this relationship is not linear, it follows a complex pattern that starts with the worst evaluations by onsite employees. It shows an improvement when teleworking reaches a maximum of 25 percent, followed by a drop when it passes a maximum of 50 percent, and a new spike for the collaborators that telework for more than 50 percent of their workday.

The intensity of the telework is positively related to the perceived psychosocial safety environment. This means that the more telework an employee does, the greater his/her perception is of the existence of policies, practices and procedures for the protection of his/her psychosocial health. This relationship requires further analysis, given that causality is far from being clear.

Teleworking and the commitment to the organization display an inverted U-shaped relationship. It is probable that employees who are always onsite feel a sort of grievance for not being able to telework, which keeps their level of commitment low. On the other hand, when teleworking surpasses 50 percent, the intensity of contact with the organization can lead to a slight detachment from it, which decreases employee commitment. However, this decrease does not reach the minimal levels of employees who are always onsite, which is regarded as the least favorable situation.

The transformational leadership style is clearly positive for the psychosocial health of employees, while passive leadership turns out to be negative for all the dimensions evaluated. Transactional leadership tends to be positive, but its impact is less than that of transformational leadership. ■

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