More news on indoor plant wellbeing benefits

Review of UK psychological research project

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A study carried out in by UK psychologists Drs Craig Knight and Alexander Haslam[1], throws more light on both the range of conditions under which office staff work, and the benefits of indoor plants to staff wellbeing, job satisfaction and productivity. The researchers noted that many office managers follow a so-called "lean" desk allocation policy, with no "ownership" of desk space, and no materials allowed on the desk top except for the papers being processed at the moment; no personal photos, no plants, not even one's own pen tray. This system has been adopted by a number of companies in Australia, on the grounds that it can save space by not having empty desks when staff are absent on sick leave, at other meetings, or on holidays, and because the bare desk space around the computer will present no distractions from the task in hand, so efficiency would be increased. The research question the psychologists asked was – might not this sparse, low-autonomy work environment be counterproductive to staff wellbeing and productivity?

The project initially tested 112 participants in an office (desk, chair, no windows) set up in the University of Exeter, and then another 47 participants were examined in a similar office set up in a commercial block in London. They used four different office scenarios:
(a) "lean"; i.e. with a bare desk and no wall decorations;
(b) "enriched"; with six potted-plants arranged somewhere around the desk, plus six plant photographs on the walls;
(c) "empowered"; in this case participants were provided with the same set of plants and pictures, but asked to arrange them as they liked, using as many or as few as they wanted;
plus
(d) "disempowered"; where participants were invited to decorate the office as above, but the experimenter would then come straight back in and immediately rearrange them all, saying, if asked, that the participant's design "was not in line with those required by the experiment". (They later explained it all at the end of the session.)

In the test office each participant was first given some desk tasks to do, to assess productivity, measured as speed and accuracy of completing the task. The first task involved sorting/management of cards or made-up memos; and the second was a "vigilance" test, completed by underlining, eg., all the lower-case 'b's in a newspaper article. Each participant was then asked to complete a questionnaire, on a 7-point scale from "completely agree" to "completely disagree", to assess attitudes to the tasks carried out, and to the office conditions. The questions covered:

-*Involvement:* eg. with statements such as "I felt engaged in what I was doing";
-*Autonomy:* eg. "during this experiment I had control over my environment";
-*Workspace satisfaction:* eg. "this was a pleasant room in which to work" ;
-*Psychological comfort:* eg. "I felt at ease during the experiment";
-*Job satisfaction:* eg. "I enjoyed" doing the tasks;

-*Physical comfort*: eg. "I felt too hot…"; and
-"*Organisational citizenship behaviour*" (OCB): participants were asked about hypothetical, discretionary extra tasks, both unpleasant (eg a dismissal) and pleasant, that they might take on, or could leave to someone else.

A very abbreviated summary of the results is shown in the table.

Table: Results for "lean" office scenario, as baseline scores (100%), and percentage differences recorded with "enriched"(R) and "empowered" (P) scenarios.

Item/Treatment/ Scores	**Lean (L) %**	**Enriched (R) %**	**Empowered (P) %**	**Significant differences between R & P?**	**Dis-empowered (D) %**	**Significant differences between L & D?**
Desk Tasks						
Sorting/management / Time taken	100	-20	-34	No	+14	No
Vigilance –Time taken	100	-17	-22	No	-10	No
Vigilance -Errors	100	-16	-29	No	0	No
Desk Task avr.	**100**	**-18**	**-28**	**No**	**-1.3**	**No**
Responses (From questionnaires)						
Involvement	100	214	260	No	124	No
Qual. workspace	100	160	167	No	112	No
Job satisfaction	100	144	150	No	114	No
Physical comfort	100	121	128	No	95	No
OCB	100	143	148	No	80	No
Autonomy	100	177	243	**Yes**	100	No
Psychol. comfort	100	165	188	**Yes**	106	No
Questionnaire avr.	**100**	**160**	**183**	**No**	**104**	**No**

The results for participants in the lean group was taken as 100% performance for the tasks carried out. The desk tasks were tested for speed and accuracy, so the shorter the time for accurate results, the better the performance, ie the higher the participant's productivity. For the questionnaire responses, on the other hand, the higher the score means the more positive the participant's attitude to the work situation. Not surprisingly, participants tested under the enriched and empowered office conditions performed significantly better on the desk tasks than those in the lean condition, with those the empowered group recording highest scores. The enriched group recorded an average productivity increase on the desk of about 18%, and the empowered group of about 28%. These are statistically significant productivity improvements. The questionnaire answers also showed a marked overall improvement in outlook and comfort, among the enriched group of about 60%, and of the empowered group about 80%.

However, most of the recorded differences in scores between the enriched and empowered groups were not statistically significantly different (i.e. odds were shorter than 20:1 that the differences were from chance alone). The two measures on which the empowered group scored significantly better than the enriched group were for

"autonomy" and "psychological comfort". This makes sense, since research has shown that staff health has become increasingly challenged in open-plan offices, because of increasing stresses from loss of privacy, 'territory' (or control over workspace) and identity, together with increases in noise interruptions and over-stimulation/distraction from surrounding activities[2,3,4].

The authors also point out that other research had shown, about 40 years ago, that working in low autonomy environments leads to higher incidence, not only of depression, but also cardio-vascular disease[5,6]. And as shown in the table, those in the "disempowered" group, again not surprisingly, recorded results virtually as low as those in the lean condition, even though these participants were actually still given the enriched office condition to work in. Well - it would be deflating, even humiliating, to have been invited to arrange the plants and pictures as you would like, and then have them all rearranged in 5 minutes because they "did not suit the investigation"! This experimental condition was therefore not as realistic as the other three office scenarios. But the results are interesting, since they certainly suggest that removing plants from offices after staff have become accustomed to having them there, are likely to result in significant losses in productivity and job satisfaction, the costs of which may well exceed the costs of maintaining the plants.

No doubt it is often not feasible to involve office staff in decisions about the placement of hired plantings, but the extra benefits are worth keeping in mind should the opportunity arise. In any case, the results of this project confirm and extend our understanding of the benefits of plants in the office for staff wellbeing, performance and productivity. Knight and Haslam sum up the findings, saying they are "in accord with… social psychological literature, which suggests that when managers extend visible signs of care and empowerment to employees, this can enhance organizational identification and thereby increase the likelihood of workers engaging in more supracontractual activity that benefits both their colleagues and their employer". In other words, they will have a less stressed, more satisfied, cooperative and productive team.

References

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