

Predictors of preference for the Activity-based Flexible Office

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Abstract. Activity-based Flexible Offices (A-FOs) are implemented with varying degree of success. Employees relocate from cell or open-plan offices, from different organizational backgrounds, varying design and implementation processes, and have different types of work tasks. This study aims at investigating whether preference for the A-FO correlate with these preconditions. The results from Chi-square tests and Spearman's non-parametric correlation of post-relocation questionnaires distributed to 11 A-FO sites, showed that a high preference for the A-FO correlated strongest with an A-FO preference prior to relocation, being a former open-plan office occupier and with frequent performance of innovation. Low preference for the A-FO correlated with frequent performance of concentration demanding tasks. Working with tasks with high confidentiality did not predict the preference ratings.

Keywords: ABW · Work activities · Planning process

1 Introduction

The Activity-based Flexible Office (A-FO) concept is implemented by organizations worldwide [1]. A-FOs are non-territorial offices that provide various office settings and workstations on a first-come-first-served basis [2]. Suggested preconditions for appraisal of the A-FO concept are office type prior to relocation, organizational context and workspace design process, as well as type of work activities [3-6].

Office type prior to relocation to A-FOs, such as the cellular office or the open-plan office, has been suggested to influence appraisal [3], such as preference for the A-FO. It is suggested that former open-plan office occupiers are likely more positive towards the A-FO concept than those relocating from cellular offices as they are more accustomed to the open character of A-FOs [3].

The internal organizational context [4, 7] and workspace design process [1, 5, 8] are other suggested influencers of employees' office preference. For example, a bureaucratic culture with hierarchical power conditions may be less suited to implement

A-FOs compared to innovative or supportive cultures [4]. Furthermore, during the workspace design process organizations have opportunity to design offices and determine a usage that support employees' work and match employees' preferences [8, 9]. A design and implementation process that is perceived meaningful and manageable increases acceptance of change [10], and may, therefore, change employee's negative preconceptions of A-FOs to positive. An indicator of the suitability of the internal organizational context or the outcomes of the workspace design process is employee attitudes towards the A-FO concept prior to relocation to A-FOs.

Memory-demanding tasks, decision-making, learning and searching for information, and gaining an overview of multiple things are typical tasks conducted by office workers. Type of work task and cognitive demands as predictors for preference for A-FOs have not been investigated in previous research on A-FOs.

In summary, cross-case comparisons of A-FO implementations are sparse [exceptions are 2, 5]. Therefore, the extent of preference for the A-FO between cases remains unclear. Suggested preconditions for preference for the A-FO are (1) office type prior to change, (2) design process and internal context-related factors, and (3) task-related factors. However, these preconditions have not been further studied. The aim of this study is to investigate whether preference for the A-FO can be predicted by some of these preconditions. More specifically the research questions (RQ) are:

RQ 1: Does employee preference for the A-FO vary between case sites?

RQ 2: Does preference for the A-FO correlate with (a) office type prior to relocation (b) office type preference prior to relocation, and/or (c) work tasks?

2 Method

A post-relocation questionnaire was sent to 11 A-FO case sites in Sweden with a total of 780 employee responses (response rate 70 %), 47 % women, 53 % men, between 2-18 months after relocation (table 1). The cases were a mix of non-profitable, private, public and municipality organizations. Case sites 8-11 belonged to the same public organization. Case site sizes varied between 40 and 228 employees.

Table 1. Case organizations' demographics

Case	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11
Org. type	Private	Private	Non-prof.	Private	Private	Municipality	Municipality	Public	Public	Public	Public
Quest. distribution (months)	3	9	2	6	6	12	18	12	12	12	12
Site size	100	50	40	160	65	158	228	98	144	46	226
Questionnaire invitations	79	50	40	33	65	158	179	98	144	46	226
Respondents Females/Males	66 32/34	46 6/40	36 28/8	24 17/7	40 23/17	91 73/18	152 50/102	57 23/34	85 25/60	35 24/11	148 67/81
Response rate	84 %	92 %	90 %	73%	58 %	58%	85 %	60 %	64 %	76 %	66 %

Questions regarded office type (11 cases) and preference (9 cases) prior to relocation, office type (11 cases) and preference (11 cases) after relocation, and task related demands: memory, innovation, decision making, learn/search for information, generate texts, count, overview multiple things, speak on the phone (10 cases), secrecy (9 cases) and concentration (6 cases). The seven response categories for questions on office type preference and office type prior to relocation were merged into two categories; “A-FO” or “other office type”, and “Cell” and “Open-plan office” (rooms with two occupiers or more) respectively. The response categories on questions for task related demands were merged into “always/often” and “sometimes/seldom/never”. To investigate case variation for preference (RQ 1), analysis of variance of the proportions with a 0.05 level of significance was performed in SPSS. To investigate correlations for the whole population (RQ 2), bivariate comparisons were performed using Chi-square tests and Spearman’s non-parametric correlation. Gender and age correlations with the outcome variable were checked.

3 Results

3.1 Case comparison

The Chi-square test showed that 35 % of the employees across all cases preferred the A-FO before other office types after relocation. However, the analysis of variance of the proportions showed that the percentage of employees preferring the A-FO after relocation varied significantly between cases (table 2). In four cases less than 20 % of the employees preferred the A-FO before other office types, while in four cases more than 60 % of the employees preferred the A-FO.

Table 2. Percentage of employees in the different cases, preferring the A-FO before other office concepts after relocation.

Cases	C11	C9	C8	C6	C7	C1	C10	C4	C3	C2	C5
% of pref. for the A-FO	0.13	0.14	0.17	0.19	0.38	0.47	0.54	0.68	0.67	0.78	0.92

3.2 Office type prior to relocation

Bivariate comparisons using Chi-square test and Spearman non-parametric correlation showed that office type prior to relocation correlated significantly with preference for the A-FO after relocation ($R=0.19$). The proportion of employees preferring the A-FO was significantly larger ($p<0.001$) amongst the employees who had relocated from open-plan offices (44.0 %) than those who had relocated from cell offices (27.5 %).

3.3 Office type preference prior to relocation

The Chi-square and Spearman correlation test also showed that preference for the A-FO prior to relocation correlated significantly with preference for the A-FO after relo-

cation ($R=0.585$). The proportion of employees preferring the A-FO was significantly larger ($p<0.001$) amongst the employees who had preferred the A-FO prior to relocation (54.5 %) than those preferring other office types prior to relocation (45.5 %). Of the employees who had preferred other office types prior to relocation, 21 % started preferring the A-FO after relocation. In the opposite direction, of the employees who had preferred the A-FO prior to relocation, 12 % started preferring other office types.

3.4 Work tasks

The Chi-square and Spearman correlation test showed that preference for the A-FO after relocation correlated significantly with often performing tasks involving innovation. Out of the employees preferring the A-FO, 80 % reported to often or always have innovation demanding tasks. Out of the employees preferring other office types only 67 % reported to have innovative tasks. The proportions varied significantly ($R=0.140$, $p<0.001$). The analysis also showed that preference for the A-FO after relocation correlated significantly but inversely with often performing concentration demanding tasks, text generating tasks and often speaking on the phone. The proportion of employees that often or always performed concentration demanding tasks was larger amongst the employees preferring other office types (86.2 %) than those (72.6 %) preferring the A-FO ($R=0.156$, $p=0.001$). Next, the proportion of employees that often or always worked with writing or text generation was significantly larger amongst the employees preferring other office types (64.2 %), than those (55.8 %) preferring the A-FO ($R=0.081$, $p=0.03$). Furthermore, the proportion of employees that often or always spoke on the phone was larger amongst the employees preferring other office types (71.1 %) than those (59.9 %) preferring the A-FO ($R=0.11$, $p=0.008$). There was no correlation between preference for the A-FO and tasks involving memory demands ($n=715$, $p=0.22$), decision making ($n=568$, $p=0.33$), counting ($n=714$, $p=0.030$), overviewing multiple things ($n=568$, $p=0.94$), confidential information ($n=656$, $p=0.19$) and learn and search for information ($n=713$, $p=0.058$). There was no correlation between preference and the individual factors age ($p=0.08$) or gender ($p=0.69$).

In summary, the factor with highest correlation coefficient for preference with the A-FO was preference for the A-FO prior to relocation. The factors with significant correlations are shown in table 3.

Table 3. Factors significantly correlating with preference for the A-FO after relocation. The preferred/advantageous office type for the factor is bolded.

Factor	Response categories	n	R
Preference for the A-FO prior to relocation	A-FO / Other office types	505	0.59
Office type prior to relocation	Cell office / Open-plan office	679	0.19
Frequent task: innovation	A-FO / Other office types	714	0.14
Frequent task: concentration	A-FO / Other office types	473	0.16
Frequent task: speaking on the phone	A-FO / Other office types	568	0.11
Frequent task: write/generate texts	A-FO / Other office types	714	0.08

4 Discussion

This study investigated differences in preference for the A-FO between 11 case sites and correlations of this preference with office type prior to relocation, office type preference prior to relocation and type of work tasks frequently performed. The large difference in preference per case site implies that there is a dominant case effect contributing to A-FO preference, rather than differences on an individual level.

A higher percentage of employees relocating from open-plan offices, rather than cell offices, preferred the A-FO. Earlier research comparing office types has shown that open-plan office occupiers have lower employee satisfaction and performance in terms of concentration, memory and learning due to reduced auditory, visual and informative privacy [11, 12]. Therefore, employees from open-plan offices may perceive more environmental support for their work by the provision of break-out spaces and quiet zones in A-FOs [cf. 13], and for cell office occupiers it is perhaps a more drastic change coming from an environment with few distractions.

The correlation between pre- and post-relocation preferences indicates that the employees who accepted the change and perceived it as meaningful [cf. 10] prior to the change took place, also preferred the A-FO after relocation. In other words, the implementation of the A-FO seemed to fulfill employees' expectations, which is why they did not change their preferences to other offices after relocation. This is supported by Nielsen & Randall [14], implying that the design and implementation process influences the outcomes of an intervention. The correlation of pre- and post-relocation preferences may, however, also be due to organizational preconditions, such as a supporting culture [cf. 4], working procedures congruent with the activity-based working and power relations [8].

The results indicate that A-FO do not support focus-demanding tasks. It would have been interesting to also investigate whether the A-FO supports communicative tasks. Further, results showed that performing tasks with confidential information did not predict the preference ratings. However, confidentiality of information may vary as well as access to environments supporting secrecy.

Other factors may also be considered for evaluating preference outcomes. In a recent study it was shown that the A-FO did not support certain work activities due to e.g. high employee-to-workstation ratio [6]. The fit or misfit between the work environment and work activities may be a strong contributor to preference rather than the work activity itself [15]. In addition, some cases might not have applied speech or clean desk rules, which may create a less supportive work environment [2].

Since this study evaluates as much as 11 cases, the questionnaires were not completely identical and were carried out at different times after the A-FO implementation. Furthermore, although reliability may have been reduced, results are based on subjective data. However, subjective ratings are a viable option for studying natural settings and a way to explore general patterns.

5 Conclusion

Employee preference for the A-FO varied between 13-92 % for the case sites. Preference for the A-FO correlated with frequent performance of tasks involving innova-

tion, however, inversely with frequent performance of concentration demanding tasks. Many A-FO sites seem also to be designed for supporting innovation rather than concentration demanding tasks. Secrecy tasks did not predict the preference ratings. Moreover, former open-plan offices occupiers preferred the A-FO to a significantly higher extent than former cell office occupiers. The employee's office type preference priori relocation was, however, the strongest predictor of their post-relocation preference. Almost all employees preferring the A-FO priori relocation continued to prefer the A-FO after relocation. To make employees more positive towards the A-FOs seem to require a thorough design and implementation process to make the change fit the organizational context, which also need to be based on which office design the employees are coming from, as well as the tasks frequently performed.

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