Spurious Correlation between Work Environment and Job Satisfaction: An Office Move Case

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Abstract: This study conducted a questionnaire survey of all employees at a company that moved its office location, both before and after the move. Results of the survey showed that while work environment satisfaction rose significantly because of the office move, there was no significant change in job satisfaction (in fact, some deterioration was observed). In addition, there was no significant change in the perspective index, which is regarded as a factor in job satisfaction, after the move. Existing studies on offices have asserted that job satisfaction increases along with work environment satisfaction. These results, however, made it difficult to posit such simple causation, showing the need for further testing and consideration.

Keywords: open-plan office, work environment satisfaction, job satisfaction, perspective index

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Introduction

Interest in the office environment from the management perspective has increased in recent years (Davis, Leach, & Clegg, 2011; Elsbach & Bechky, 2007; Elsbach & Pratt, 2007). For example, there has been a shift in focus to improve communication through the change of office layouts or the implementation of non-territorial office layouts (Inamizu, 2013, 2014, 2015b).

In fact, much of the existing research on offices has noted a relation between the work environment, including satisfaction with that environment, and organizational achievements, particularly job satisfaction (Danielsson & Bodin, 2008; Sundstrom & Sundstrom, 1986). For example, according to De Croon, Sluiter, Kuijer, and Frings-Dresen (2005), who reviewed 49 high-quality papers out of a sample of 1,091 existing studies on offices, a certain level of correlation exists between office design and job satisfaction. Specifically, open-plan offices decrease job satisfaction because of less privacy. In addition, Veitch, Charles, Farley, & Newsham (2007) conducted a survey of 779 workers in open-plan offices in five cities and nine organizations in the U.S. and Canada, developing a scale to measure work environment satisfaction and examining the relationship between work environment satisfaction and job satisfaction. As a result, this study demonstrated a positive relationship between work environment satisfaction and job satisfaction. Veitch et al. (2007) went so far as to declare that even though work environment has been considered as a factor in job dissatisfaction since Herzberg's (1966) study, a satisfying work environment can be a factor in job satisfaction and other organizational achievements as well.

However, can we simply assume that there is a relation between work environment satisfaction and job satisfaction? Except for some studies, the above conclusions were actually drawn from surveys

conducted at a single point in time. We therefore need to take another look at the causal relationship between these two factors.

A longitudinal study is effective for exploring causal relationships across multiple points in time. For example, Takahashi, Okawa, & Inamizu (2014a, 2014b) conducted a longitudinal study of a certain corporation's restructuring to show that a spurious correlation may exist between job satisfaction and self-determination (a construct of intrinsic motivation) and further suggested that the perspective index is a true factor in job satisfaction. In fact, many studies have shown the perspective index to be a factor in job satisfaction (Inamizu, 2015a; Okada & Inamizu, 2014; Tahakashi, 1997, 2013, 2014).

On the basis of an awareness of these problems, this study investigates whether a relation exists between work environment satisfaction and job satisfaction by conducting a survey of Company X before and after its office move. The survey found that while the office move significantly increased work environment, job satisfaction did not change at all and even deteriorated. In other words, this study suggests that it is difficult to assume the simple causal relationship of increased work environment satisfaction leading to greater job satisfaction.

Method

Company X designs, develops, and sells accounting systems and has almost 60 employees. Besides its Tokyo headquarters, the company has several branches outside of Tokyo and even has several employees who telecommute. The company's organizational structure consists of departments such as business planning, general affairs and finance, sales, development, and customer service (which handles client inquiries regarding the accounting systems).

On March 30, 2015, Company X moved its headquarters office.

Figure 1. The layout of the new office

Figure 1 shows the layout of the new office. The new office has three times the space as the old office, allowing more room for work desks, as well as meeting rooms,¹ web conference areas,² communications spaces,³ and an entrance lobby.⁴ The management of Company X expected that this improved office environment would lead to better work environment satisfaction and hence better job satisfaction.

¹ Meeting rooms in Figure 1. The previous office had no closed-off meeting rooms, which made it difficult to have rooms for client meetings, such as Rooms 2 and 3 in the figure.

² Web conference areas in Figure 1. The previous office had no such areas, so people in sales had to use their own desks for telephone calls and web conferences with clients.

³ Window spaces and communication spaces in Figure 1. The previous office had almost no room for communication spaces other than work desks.

⁴ Entrance lobby in Figure 1. The previous office had desks located just inside the entrance.

Questionnaire surveys were conducted both before and after the move to investigate the effects of the office relocation. The questionnaire was administered not only to those working in the headquarters office that was moving but also to all employees, including those in branch offices and telecommuters. The first survey was conducted between March 5 and March 25, 2015, and responses were received from all 55 employees. The second survey was conducted between June 8 and June 25, 2015, and responses were received from 51 (nearly all) employees.

Survey questions covered a broad range of topics, such as perceptions and satisfaction regarding the work environment, job satisfaction, and the organizational climate. Three are discussed below (work environment satisfaction, job satisfaction, and perspective index), in line with the focus of this study.

The following question was used to measure job satisfaction (on a five-point scale).

J1: Are you satisfied with your job?

Work environment satisfaction was measured as the simple sum of the following four questions (on a five-point scale).

W1: Do you want to spend lots of time in your current office?

W2: Do you feel a sense of attachment to your current office?

W3: Do you feel that your current office has a pleasant environment?

W4: In general, are you satisfied with your current office?

The perspective index was measured as the simple sum of the following five questions (on a five-point scale). Questions marked (R) are inverted.

P1: Are you able to see the desirable shape that your company will take in ten years?

P2: Are most of your work hours spent on routine tasks? (R)

P3: Are your job targets clearly specified by your superiors?

P4: Does your company have the atmosphere in which reaching the short-range norm tends to have priority over pursuing long-range goals? (R)

P5: Can you visualize a positive future for yourself ten years from now in this company?

Research Results

Table 1 shows the basic statistics for the 106 samples obtained from the two surveys, before and after the move. As can be seen in Table 1, work environment satisfaction and job satisfaction are positively correlated (at a 5% level of statistical significance). At the same time, a positive correlation can be seen between the perspective index and the other two variables (work environment satisfaction and job satisfaction), and these are statistically significant at the 5% level and 1% level, respectively. There is a particularly strong positive

Table 1. Mean, standard deviation, and correlation of the three measurements

	Mean	SD	Correlations	
			JS	WES
Job Satisfaction (JS)	3.34	1.068		
Work Environment Satisfaction (WES)	12.22	4.033	0.244 *	
Perspective Index (PI)	15.50	3.557	0.479 **	0.205 *

Note: $N = 106$, ** $p < 0.01$, * $p < 0.05$

Table 2. Comparison between pre-move and post-move survey

Headquarter	Pre-move (<i>N</i> = 32)		Post-move (<i>N</i> = 34)		<i>t</i> -value
	Mean	SD	Mean	SD	
JS	3.50	1.164	3.38	1.101	.422
WES	10.81	3.754	13.06	4.022	2.342 *
PI	16.72	3.778	15.50	3.719	1.320
Non Headquarter	Pre-move (<i>N</i> = 23)		Post-move (<i>N</i> = 17)		<i>t</i> -value
	Mean	SD	Mean	SD	
JS	3.17	.887	3.18	1.074	.008
WES	11.70	4.016	13.88	3.887	1.725
PI	14.17	3.312	15.00	2.449	.867

Note: ** $p < 0.01$, * $p < 0.05$.

correlation between the perspective index and job satisfaction (correlation coefficient of 0.479).

Table 2 and Figure 2 compare responses before and after the move. An analysis was conducted of both the relocated headquarters and the branch offices (and telecommuters) that did not relocate. The relocated headquarters had increased work environment satisfaction (statistically significant at the 5% level), although no statistically significant changes were observed in job satisfaction or the perspective index. Rather, a downward trend was observed in both job satisfaction and the perspective index.

Branch offices that did not move showed a similar increase in work environment satisfaction, although this was not statistically significant. The reasons for this increase will be left for a future study,

Figure 2. Change in work environment satisfaction and job satisfaction after the office move

but it is interesting that the major office move and vast improvements in the work environment at headquarters had some effect on those employees working in locations that did not move. At the same time, no statistically significant changes were observed in either job satisfaction or the perspective index.

Discussion and Conclusion

Existing studies on offices have noted a relation between work environment (and satisfaction with it) and job satisfaction. However, many of these studies are based on surveys conducted at a single point in time, so they have not adequately tested whether such a causal relationship exists. This study therefore considered whether work environment satisfaction and job satisfaction are truly

correlated by conducting a survey at Company X both before and after an office move. This survey also measured the perspective index, which is known as a factor in job satisfaction.

The results of this survey showed that there was a statistically significant positive single correlation between work environment satisfaction and job satisfaction. However, job satisfaction and perspective index remained unchanged after the office move, even though work environment satisfaction increased.

These results suggest that it is difficult to posit a simple causal relationship in which better work environment satisfaction leads to higher job satisfaction. The two-factor theory of Herzberg (1966) differentiates between factors in job satisfaction (“motivator” factors) and factors in job dissatisfaction (“hygiene” factors). This theory regards the work environment as one “hygiene” factor.

In addition, even where a correlation was observed between work environment satisfaction and job satisfaction, that could have been a spurious correlation between the perspective index and both work environment satisfaction and job satisfaction. Many studies have noted that the perspective index is an important factor in job satisfaction. At the same time, they assume that the perspective index is a factor influencing work environment satisfaction. Rafaeli and Vilnai-Yavetz (2004) suggest the possibility that emotions toward organizations influence sense-making of artifacts and emotions toward artifacts. In this sense, the perspective index may well influence work environment satisfaction.

Thus, we see that it is difficult to posit a chain of simple causal relationships from work environment improvements to work environment satisfaction and on to job satisfaction (and ultimately job performance). This topic requires further testing and consideration.

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