

# The Effects of Individual and Situational Factors on Self-learning Activities

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## Abstract

Self-learning is one of the most typical activities of self-development. Although self-development has been regarded as a type of organizational citizenship behavior (OCB), it has rarely been examined in OCB literature. This study focuses on self-learning activities and empirically examines whether they are influenced by job satisfaction, stress, and life happiness. After a discussion on whether self-learning activities can be viewed as a form of OCB, the effects of these variables on various kinds of self-learning activities are analyzed using data collected from more than 30,000 workers. While the positive impacts of job satisfaction and life happiness are empirically revealed, as expected, a positive effect of stress on these activities is demonstrated, contrary to the hypothesis. Some discussion in response to the empirical results is also proposed.

**Keywords:** OCB, self-learning, job satisfaction, stress, life happiness

## 1. Introduction

Organizational citizenship behavior (OCB) is one of the most important behavioral concepts that researchers in the Organizational Behavior (OB) field have explored since the early 1980s (Bateman and Organ, 1983; Smith, Organ, and Near, 1983). OCB was initially defined as a conceptual, abstract notion by Dennis Organ and his colleagues at Indiana University. Since the definition of OCB was proposed, researchers across the globe have debated what kinds of actual behaviors should be included as types of OCB. As a result, many different kinds of OCB have been introduced. In this regard, Podsakoff, MacKenzie, Paine, and Bachrach (2000) identified nearly 30 different OCB dimensions that have been explored in previous research. LePine, Erez, and Johnson (2002) also proposed 40 measures of OCB. Responding to these somewhat confusing circumstances of OCB dimensions, Organ, Podsakoff, and MacKenzie (2006) suggested the following list, which contains the most common dimensions seen among OCB researchers.

1. Helping
2. Sportsmanship
3. Organizational loyalty
4. Organizational compliance
5. Individual initiative
6. Civic virtue
7. Self-development

Among these seven OCB dimensions, past studies have considered self-development to be a type of OCB. George and Brief (1992) and George and Jones (1997) referred to it as “developing oneself,” while Podsakoff, MacKenzie, Paine, and Bachrach (2000) defined it as “self-development.” Farh, Zhong, and Organ (2004) called it “self-training.” For example, George and Brief (1992) were interested in the effect of one’s mood at work on organizational spontaneity – a similar concept to OCB – and predicted that a positive mood would facilitate a positive self-evaluation; in turn, this influences self-development.

Despite its importance, OCB scholars have not empirically confirmed self-development as a dimension of OCB. Organ et al. (2006) noted: “Interestingly, self-development has not received any empirical confirmation in the OCB literature. However, it does appear to be a discretionary form of employee behavior that is conceptually distinct from the other OCB dimensions, and thus might be expected to improve organizational effectiveness through somewhat different mechanisms than the other forms of citizenship behavior” (p. 311). Building on this perspective, Ueda (2012) considered a positive attitude toward self-development, the hope of future self-development, and the experience of self-development as three aspects of the concept, and empirically examined whether these variables were affected by gender, education, job satisfaction, and task characteristics. To a certain degree, his study confirmed that self-development is positively influenced by job satisfaction and some task characteristics, such as unpredictability and well-defined task requirements.

However, he utilized “yes-no” data by simply asking respondents to answer whether they performed self-development, and did not specify what would be included in the term. There are many different kinds. Some respondents may have regarded “reading a book” as an important part of self-development, while others might have considered only more intensive opportunities such as “off-the-job training” to comprise self-

development activities. Thus, more concrete questions should have been asked.

This study focuses on self-learning activities, which are one of the most typical self-development tasks, and examines whether self-learning is influenced by job satisfaction, stress factors, and life happiness. Past studies have confirmed elements such as job satisfaction and stress to be antecedents of OCB (reviewed by Ueda, 2004). It is important to determine whether self-learning activities have the same antecedents as other representative dimensions of OCB; this is necessary because, as described later, self-learning activities have a different process from other OCB dimensions in terms of contributing to organizational effectiveness. Further, there are various kinds of self-learning activities; this study examines whether the effect of these antecedents differs depending on the type of self-learning activity.

## **2. Self-learning activities and their characteristics as dimensions of OCB**

### **(1) Self-learning activities as dimensions of OCB**

Seeing that a behavior is considered a type of OCB, it has to fulfill several conditions based on the conceptual definition of OCB. Although there are different definitions of OCB proposed by scholars, every researcher agrees that the most basic definition of OCB was formed by Organ (1988), as follows: “Individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and in the aggregated promotes the efficient and effective functioning of the organization” (p. 4).

Using this definition, we have to consider three basic requirements when judging whether a behavior constitutes OCB. First, the behavior should be performed discretionally and not as a formal role prescribed by something like job descriptions. Secondly, it should not be recognized by a formal reward system in the organization; therefore, those who exhibit the behavior should not be directly given an explicit reward in return for performing the behavior. Finally, although each behavior is small and subtle, different behaviors as a whole should contribute to the organization in the long term.

Do self-learning activities generally satisfy these conditions? First of all, because self-learning is defined as discretionary learning to improve one’s skill or ability, it is obvious that these activities are not passive behaviors under the orders of a supervisor or organization. George and Brief (1992) said “(w)hatever the developmental activity,

it is distinguished by being beyond the call of duty and by its potential benefit to the organization” (p. 311). Thus, self-learning activities meet the first condition.

How about the second condition? In considering it, we should focus on how, or in what process, the behavior eventually contributes to the organization, and, as a result, who is subject to be rewarded. First of all, although there are many different kinds of OCB, all of them are commonly characterized by the fact that those who exhibit OCB are different from those who perform tasks more effectively, and eventually contribute to the organization. For example, “punctuality” helps other workers perform their operations more smoothly and predictably. A person who “helps a newcomer” enables him/her to carry out tasks more efficiently. There is some degree of ambiguity regarding which employee is rewarded – the one who performs formal tasks better, or another (who performs OCB) who improves context and enables his/her peers to carry out formal tasks better. OCB researchers assume that the latter is not rewarded, and that s/he does not feel dissatisfaction with this disregard of his/her display of OCB.

In contrast, one of the salient characteristics of self-learning activities is the fact that the same person who carries out tasks performs self-learning activities; therefore, this person is subject to being rewarded. Although these activities end up contributing to the organization in most cases, this occurs by improving the skills of a worker who engages in self-learning activities.

Very often, OCB is classified as OCB-O and OCB-I (Williams & Anderson, 1990). OCB-O is defined as OCB that directly contributes to the organization, while OCB-I indicates performing OCB for others who work for the organization. OCB-I is considered to contribute indirectly to the organization by improving other workers’ jobs within the organization. According to this terminology, self-learning activities should be referred to as OCB-self; that is, OCB for oneself who works for the organization. Self-learning activities could also be called OCB that contribute indirectly to the organization through the employee’s own skill improvement. Workers who perform self-learning activities with no idea about the possibility of receiving a reward are very exceptional.

Therefore, as with the second condition, it might be difficult to regard self-learning activities as a type of OCB because in most of cases, self-learning is a behavior performed by the person who expects that s/he will do his/her tasks better and be rewarded by the organization’s formal reward system later on. However, as described later, all kinds of OCB face this problem to a greater or lesser degree.

To make matters worse, it might be difficult to conclude whether self-learning activities will eventually contribute to an organization on one level or another, even if these activities are performed in order to enhance one's task performance. In other words, it is challenging to definitively say whether self-learning activities meet the third condition. Self-learning activities are performed for several reasons. If these activities are to be considered a type of OCB, the minimum necessary condition is met for these activities to finally contribute to the organization, regardless of whether self-learners seek a reward. However, there could be some people who are unsatisfied with their current jobs who also perform self-learning activities in order to obtain more skills and leave the organization for another job. In most cases, these kinds of self-learning activities do not contribute to the organization. Further, an outside observer has difficulty detecting the true intention of the person who intends to perform such self-learning activities.

## **(2) Self-learning activities as a type of OCB**

As described above, if we rigorously follow Organ's definition of OCB, it is rather difficult to regard all self-learning activities as OCB. However, even if this is so, it does not necessarily mean that self-learning activities should *not* be empirically examined as an element of OCB. To tell the truth, the problem with confusing true kinds of OCB – which are conducted with the motive of contributing to the organization – with fake types of OCB – which are carried out based on the desire to reward – is not limited to self-learning activities. As OCB researchers have recognized, this has been a common problem since the above definition of OCB was proposed (Organ, et al., 2006).

In fact, it is doubtful that OCB always goes unrewarded on a formal basis. Very often, a range of formal roles among workers remains undefined in a real business organization. It is well known that an indefinite range of formal jobs is quite usual in traditional Japanese organizations (Iwata, 1977). Regarding Western organizations, which are usually considered to have rather definitive job descriptions, some researchers found that workers recognized a range of formal job roles differently than their supervisors (Morrison, 1994). If OCB is defined as behavior that goes beyond a worker's formal roles, it is difficult to determine where a formal role ends and OCB begins.

Since a range of formal roles among workers remains ambiguous, supervisors could evaluate a wide variety of workers' behaviors, including in-roles as well as extra-roles.

Organizations sometimes prefer seeing a worker's whole character to focusing on his/her specific skillset or performance for personnel evaluation. Very often, they highly value workers who not only perform formal tasks, but also exhibit OCB. Further, based on such tendencies surrounding evaluation, some workers display fake OCB to receive higher evaluations from their supervisors.

Although this kind of fake OCB is not included in OCB according to its original definition, it is costly and extremely difficult to distinguish between true OCB and fake OCB in a real organizational situation. Seeing this problem, Organ proposed that researchers should borrow the definition of contextual performance in order to define OCB in a new way, because contextual performance is defined based on its function for an organization or its members, rather than performers' intentions (Organ, 1997).

When considering whether self-learning activities constitute OCB, what if we ignore the fact that self-learning activities are performed mainly based on the expectation of a reward, or the hope of changing jobs, and instead focus on the possibility of supporting "the broad organizational, social, and psychological environment in which the technical core must function" (Borman & Motowidolo, 1993, p. 73)? Regardless of a "covert" intention, self-learning activities improve workers' skills. If one or several subordinates carry out some kinds of self-learning activities in a department, not only do the people who perform the activities expand their capacity; the entire department does as well, and managers can enjoy utilizing the department's enhanced ability. Taking Japanese chess (*shogi*) as an analogy, a pawn is promoted to a gold general on a *shogi* board. If some pawns became gold generals, the player can enjoy more strategies and play the game with more advantages. Further, by seeing that a coworker performs some self-learning activities, other workers are encouraged to enlighten themselves. If this process continues, a constructive organizational climate is created. Therefore, even if self-learning activities are performed for personal gain, there is the possibility that these activities contribute to the organization by developing a context that supports task performance. Self-learning activities – despite incompatibility with Organ's (1988) original definition of OCB – can still be considered a type of OCB because they meet the conditions of contextual performance.<sup>1</sup>

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<sup>1</sup> Although it might be an extreme case, there is always a university professor committed to self-development in order to obtain a better position at another university. Usually, s/he has no interest in contributing to his/her current university in any way. Since his/her resignation will be his/her only contribution to the university, we

### (3) Various kinds of self-learning activities

Self-learning is a rather comprehensive concept. There are various kinds of self-learning activities, and workers sometimes have little way of determining whether they are carrying out self-learning or some other type of task. For example, reading a book might be able to increase some sort of knowledge or ability relevant to work, but it is sometimes challenging to always regard reading a book as a self-learning activity to improve one's ability to work. Furthermore, some workers consider reading a book to be a hobby, even if they recognize that reading a book might eventually enhance their ability. Thus, in an empirical study, it is not desirable to roughly ask the respondents about whether they perform self-learning. In this study, the following seven self-learning activities are empirically examined. This list considers the time and cost for each self-learning activity. For example, attending school is time-consuming and very costly. In contrast, using the Internet or asking a knowledgeable person is very easy and inexpensive.

- Attend school
- Attend a course, seminar, or study session
- Take a correspondence course
- Take an e-learning course
- Read a book
- Use the Internet
- Ask a knowledgeable person

### 3. Hypotheses

Even if self-learning activities are generally useful in terms of creating a supportive work environment to improve task performance, it is more difficult to assume that antecedents have some effect on self-learning activities than in the case of regular OCB.

OCB researchers believe that OCB is exhibited in social exchanges between workers and the organization on the basis of a reciprocal relationship. This means that the organization expects workers to perform OCB in return for tangible and intangible benefits given by the organization. If so, a worker who is satisfied with his/her job will probably display more OCB. This positive effect of job satisfaction on OCB has

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might be able to say that selfish self-development is still regarded as a type of OCB that benefits the organization.

been confirmed in many studies (reviewed by Organ et al., 2006; Ueda, 2004). If self-learning activities are performed with the same intention as regular OCB, the positive effect of job satisfaction on these activities will be empirically verified. In contrast, if self-learning activities are performed with the desire to change jobs, the effect of job satisfaction on these activities might be negative. In other words, we have to consider the possibility that two different causes might raise motivation for self-learning activities.

Although there are different motives for self-learning activities, the positive effect of job satisfaction on self-learning activities will be statistically observed. While a highly satisfying job induces self-learning activities in a relatively straightforward manner, a worker who is unsatisfied will see a relatively ambiguous effect on these activities because learning is not necessarily directly linked to more attractive jobs or another organization. There is a big gap between gaining new knowledge or skills and changing careers. Therefore, while some employees might perform self-learning activities as a means to change jobs, we assume that on the whole, statistical analysis will confirm that job satisfaction positively influences self-learning activities. Next, we propose the following hypothesis.

H1: Job satisfaction will have a positive effect on self-learning activities.

Secondly, past studies have revealed that stress or burnout syndrome has a negative impact on OCB (Cropanzano, Rupp, & Byrne, 2003). If high stress is attributable to the work environment, employees will want to leave their environment and find another job. If so, stress might have a positive effect on self-learning activities. However, the reality is that workers under stress tend to be preoccupied with hard work and have no mental or physical space to study something extra. Therefore, we propose the following hypothesis.

H2: Stress will have a negative effect on self-learning activities.

Traditionally, while many job-related factors have been considered as antecedents of OCB, the effects of factors not related to one's job have not been empirically examined, except for personality or dispositional elements. This research tendency is justified because OCB is a factor that mainly affects work situations. Job-related attitudes have a stronger effect on OCB than dispositional factors (Organ & Konovsky, 1989). However, research on social psychology has revealed that helping a stranger in a social context is related to emotions (Baron, 1971; Regan, 1971). Furthermore, self-learning activities are sometimes related to factors beyond one's current job, such as future hopes



or optimistic values. In this study, life happiness is considered an antecedent of self-learning activities. Life happiness and job satisfaction are conceptually different from each other, although job satisfaction very often influences life happiness. Next, we propose the following hypothesis.

H3: Life happiness will have a positive effect on self-learning activities.

These factors might be related to each other. Job satisfaction and life happiness might be influenced by stress, and stress might also be affected by job satisfaction. Therefore, we have to consider the probability of multicollinearity when multiple factors are entered into one regression simultaneously.

## 4. Empirical study

### (1) Data and samples

The data used for this study include the “Japanese Panel Study of Employment Dynamics, 2017” by the Recruit Works Institute (RWI). RWI collected the data from 48,763 workers who were older than fifteen in Japan in January of 2017. RWI deposited this data into the Social Science Japan (SSJ) Data Archive at the Center for Social Research and Data Archives, which is part of the University of Tokyo’s Institute of Social Science. The author received permission to use the data from the SSJ Data Archive.

### (2) Variables

Gender: Although the effect of gender is not a concern in this paper, it should be considered a control variable. [1] is assigned to male respondents, and [2] to females.

Job satisfaction: The respondents were given six items to measure various aspects of job satisfaction and asked how much they agree on a five-point scale ranging from [1] *unlikely* to [5] *likely*. The average of these responses is used as the job satisfaction variable (the Cronbach’s alpha is 0.903).

Degree of stress: The respondents were given eight items to gauge the degree of stress and asked how much they agree on a five-point scale ranging from [1] *never* to [5] *always*. The average of these responses is used as the stress variable (the Cronbach’s alpha is 0.874).

Life happiness: The respondents were presented with two aspects of life happiness and asked how much they agree on a five-point scale ranging from [1] *very unhappy*/

*unsatisfied* to [5] *very happy/satisfied*. The average of these responses is used as the life happiness variable (the Cronbach's alpha is 0.897).

**Self-learning activities:** The respondents were asked whether they had performed any of the seven self-learning activities – attend school, a course, seminar, or study session, take a correspondence course, take an e-learning course, read a book, use the Internet, and ask a knowledgeable person – in the last twelve months. This kind of data was collected as a binary variable (1: *yes*, 0: *no*). The frequency of *yes* is calculated, and this variable is used as a quantitative variable, showing the degree of all self-learning activities.

Except for the item about gender, all questions are described in the Appendix.

### (3) Analytical method

Because an objective variable is binary, logistic regression analysis is used. Multiple linear regression analysis is also used to provide a quantitative measure of self-learning activities.

## 5. Result

### (1) Basic statistics and correlations

**Table 1 Basic Statistics and Correlations**

variables	means	standard deviations	1	2	3	4
1.gender	1.520	0.500				
2.job satisfaction	2.895	0.884	0.010			
3.stress	2.542	0.767	0.130*	-0.264*		
4.life happiness	3.333	0.949	0.103*	0.488*	-0.357*	
5.self-learning activities	0.194	0.112	0.003	0.101*	0.087*	0.080*

n = 30,499-48,681 \* : p < 0.01

Table 1 shows the variables' means, standard deviations, and inter-correlations. Each variable for each self-learning activity is binominal; thus, only their total values (which means the average number of self-learning activities that the respondents performed in a year) are included to calculate basic statistics and correlations.

Self-learning activities have no significant correlation with gender ( $r = 0.003$ , n.s.), but have significant positive correlations with job satisfaction ( $r = 0.101$ ,  $p < 0.01$ ), stress ( $r = 0.084$ ,  $p < 0.01$ ) and life happiness ( $r = 0.080$ ,  $p < 0.01$ ), although all of the values are very small. Positive correlations between self-learning activities and job satisfaction, and between self-learning activities and life happiness, are as expected. However, the positive correlation between self-learning activities and stress is contrary to our hypothesis. This result means that highly stressed workers tend to do more self-learning activities, or that workers doing more self-learning activities feel more stress.

## (2) Linear regression analysis

Table 2 shows the results of a multiple linear regression analysis with the total values of self-learning activities as the dependent variable. The ANOVA shows that the F-value of the regression equation is 183.775 ( $p < 0.001$ ). Although the adjusted coefficient of determination in this model is 0.023, all of the coefficients are significant. All the values of VIF do not exceed 1.500; based on this outcome, we can conclude that the possibility of multicollinearity is not relevant.

Although gender is a control variable, it has a negative effect on self-learning activities ( $\beta = -0.022$ ,  $p < 0.001$ ), which means that male workers tend to perform these activities more positively than female workers. Both job satisfaction and life happiness have positive impacts on self-learning activities ( $\beta = 0.090$ ,  $p < 0.001$ ;  $\beta = 0.086$ ,  $p < 0.001$ ). This means that workers who are more satisfied with their jobs, or who are feeling more life happiness, are more active in self-learning activities than less satisfied, or less happy, workers. This result is as expected in H1 and H2. However, the positive effect of stress on self-learning activities is not as expected ( $\beta = 0.118$ ,  $p < 0.001$ ). Like the discussion in the previous section, this means that highly stressed workers tend to devote more energy to self-learning activities.<sup>2</sup> This is contrary to H2, and the results of past studies focus on how stress impacts OCB.

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<sup>2</sup> We checked the interaction effects between job satisfaction and stress, and between life satisfaction and stress. However, neither of them showed a significant outcome.

**Table 2 Result of Linear Regression Analysis**

	beta	t-values	Sig	VIF
gender	-0.022	-3.816	<0.001	1.051
job satisfaction	0.090	13.832	<0.001	1.329
stress	0.118	19.040	<0.001	1.206
life happiness	0.086	12.620	<0.001	1.439

n = 30,499

**(3) Logistic regression analysis**

Table 3 depicts all the results of logistic regression analysis for each self-learning activity, and Table 4 summarizes these findings. In Table 3, B represents the coefficients in the logistic regression model, and Wald indicates the Wald statistic of B.  $\text{Exp}(B)$  is the odds ratio. The two-sided 95% confidence interval of  $\text{Exp}(B)$  is also shown.

Gender has an interesting effect on self-learning activities. While female workers are more active in terms of attending school or a course, male workers are more proactive regarding using the Internet or asking a knowledgeable person. Workers have to be physically and mentally more prepared for the former activities than the latter ones. Hence, we can say that female workers choose burdensome activities more proactively than males, and that male employees enjoy less complicated activities more than females.

Job satisfaction has a significant, positive impact on self-learning activities except for attending school. This finding also supports H1, which implies that these activities are performed due to the same intention as the other type of OCB. In contrast, the insignificant result of the effect of job satisfaction on attending school means that these burdensome activities are performed for reasons other than a simple motive to contribute to the organization through OCB.

The positive effect of stress is consistent. This means that highly stressed workers tend to be more active in terms of self-learning activities. This is contrary to H2. Although the causal relationship should also be considered in a more careful way, it is unlikely that self-learning activities induce a high amount of stress because these activities are discretionary, and workers can determine if they carry out these tasks. Life happiness also influences all self-learning activities positively. This outcome supports H3.

**Table 3 Result of Logistic Regression Analysis**

		B	S.E.	Wald	Sig.	Exp(B)	95% C.I. for EXP(B)		Cox & Snell R Square	Nagelkerke R Square
							Lower	Upper		
Attend school	gender	0.129	0.054	5.664	0.017	1.137	1.023	1.264	0.006	0.018
	job satisfaction	-0.018	0.034	0.288	0.592	0.982	0.919	1.050		
	stress	0.409	0.038	117.168	<0.001	1.505	1.397	1.620		
	life happiness	0.292	0.033	76.746	<0.001	1.339	1.255	1.430		
	(constant)	-5.174	0.189	753.121	<0.001	0.006				
Attend a course	gender	0.173	0.042	16.803	<0.001	1.188	1.094	1.291	0.008	0.018
	job satisfaction	0.252	0.027	83.870	<0.001	1.286	1.219	1.357		
	stress	0.251	0.029	73.097	<0.001	1.286	1.214	1.362		
	life happiness	0.129	0.026	24.447	<0.001	1.138	1.081	1.198		
	(constant)	-4.477	0.147	929.525	<0.001	0.011				
Take a correspondence course	gender	0.097	0.076	1.655	0.198	1.102	0.950	1.278	0.003	0.012
	job satisfaction	0.124	0.048	6.547	0.011	1.131	1.029	1.244		
	stress	0.416	0.053	62.449	<0.001	1.516	1.367	1.680		
	life happiness	0.138	0.046	8.910	0.003	1.148	1.048	1.256		
	(constant)	-5.773	0.262	486.381	<0.001	0.003				
Take an e-learning course	gender	-0.418	0.055	57.465	<0.001	0.658	0.591	0.733	0.004	0.012
	job satisfaction	0.087	0.034	6.426	0.011	1.091	1.020	1.167		
	stress	0.270	0.037	53.613	<0.001	1.310	1.219	1.409		
	life happiness	0.181	0.033	30.058	<0.001	1.199	1.123	1.279		
	(constant)	-3.913	0.181	467.916	<0.001	0.020				
Read a book	gender	0.034	0.025	1.818	0.178	1.035	0.985	1.087	0.014	0.02
	job satisfaction	0.164	0.016	102.736	<0.001	1.178	1.142	1.216		
	stress	0.204	0.018	133.789	<0.001	1.227	1.185	1.270		
	life happiness	0.172	0.016	122.054	<0.001	1.187	1.152	1.224		
	(constant)	-2.365	0.086	760.176	<0.001	0.094				
Use the Internet	gender	-0.108	0.024	20.611	<0.001	0.897	0.856	0.940	0.013	0.018
	job satisfaction	0.162	0.015	114.839	<0.001	1.176	1.142	1.211		
	stress	0.227	0.017	187.001	<0.001	1.254	1.214	1.296		
	life happiness	0.136	0.014	88.948	<0.001	1.146	1.114	1.179		
	(constant)	-1.459	0.079	340.637	<0.001	0.233				
Ask a knowledgeable person	gender	-0.288	0.037	61.198	<0.001	0.750	0.698	0.806	0.02	0.038
	job satisfaction	0.331	0.024	192.892	<0.001	1.393	1.329	1.460		
	stress	0.474	0.026	345.220	<0.001	1.606	1.528	1.689		
	life happiness	0.178	0.023	62.625	<0.001	1.195	1.144	1.249		
	(constant)	-4.429	0.128	1205.243	<0.001	0.012				

**Table 4 Summary of Significant Results of Logistic Regression Analysis**

	gender	job satisfaction	stress	life happiness
Attend school	+		+	+
Attend a course	+	+	+	+
Take a correspondence education		+	+	+
Take an e-learning	-	+	+	+
Read a book		+	+	+
Use the Internet	-	+	+	+
Ask a person	-	+	+	+

## 6. Discussion and conclusion

This study focused on self-learning activities as types of OCB and examined how some factors influence self-learning activities. According to the empirical results in the previous section, the effects of job satisfaction and life happiness on self-learning activities are as expected in H1 and H3, while the effect of stress is contrary to the expectation in H2. The positive effect of stress on self-learning activities is very surprising. Self-learning activities might be burdensome, but they are discretionary. If workers feel some stress, they can stop such activities of their own volition. Some kinds of self-learning activities might have a role in reducing stress. Further, although the correlation between self-learning activities and job satisfaction is significantly positive, and that of stress is also positive, the correlation between stress and job satisfaction is significantly negative. Thus, it is expected that some complicated relationships might exist among these variables. These relationships should be discussed and examined in future research.

As already described, the effect of job satisfaction is composite. Some workers perform self-learning activities to improve their current job in return for benefits or a reward from the organization. In these cases, job satisfaction positively influences self-learning activities. However, some other workers do self-learning activities in order to obtain a better position at a different organization. Here, the negative effect of job satisfaction on self-learning activities may have been observed. Although both types of workers might actually exist, the empirical result supports H1 (and H3), which means that the former type of worker is usually present. However, even though self-learning

activities can be considered a type of OCB conceptually, or at least something that supports the task environment similar to OCB, the relationship between self-learning activities and these factors is somewhat unique. Therefore, it is difficult, or undesirable, to unify regular OCB dimensions and self-learning activities.

This study has some limitations. First, the data regarding self-learning activities are binominal and too simple. We should have also focused on whether the respondents performed each self-learning activity, as well as their level of difficulty and the length of time it took them. Secondly, the measures of independent variables differ from those established by past studies (Fields, 2002). For example, we found a positive relationship between self-learning activities and stress, which is contrary to the results of previous studies on OCB, but we cannot determine the reason of this outcome due to the complicated effect of stress on these activities, or the use of different measures of stress in previous studies. Although these limitations exist, this empirical study marks the beginning of examining the effects of various factors on self-learning activities, or self-development. We expect future studies to explore this challenging but attractive factor, and to examine it as a type of OCB.

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## Appendix

[Life Happiness]

Look back on the last year (2016/1-2016/12), and ask the following questions (1. *very unhappy/unsatisfied* – 5. *very happy/satisfied*).



1. How much happiness have you felt in your life?
2. How satisfied are you with your life?

[Stress]

Look back on the last year (2016/1-2016/12), and check off the most likely alternative (1. *never* – 5. *always*).

1. Headache and dizziness
2. Pain in shoulders or back
3. Palpitations and shortness of breath
4. Exhaustion
5. Tension
6. Depressed
7. No appetite
8. Trouble sleeping

[Job satisfaction]

Look back on the last year (2016/1-2016/12), and check off the most likely alternative about your job (1. *unlikely* – 5. *likely*).

1. I was satisfied with my job.
2. I was satisfied with my relationships in the workplace.
3. I felt that I developed at my job.
4. I had career prospects.
5. I was satisfied with my career.
6. I worked with gusto.