

# Meta-Analysis of the Impact of Positive Psychological Capital on Employees Outcomes: The Moderating Role of Tenure

Hyeondal Jeong, Yoonjung Baek

**Abstract**—This research examines the effects of positive psychological capital (or PsyCap) on employee's outcomes (satisfaction, commitment, organizational citizenship behavior, innovation behavior and individual creativity). This study conducted a meta-analysis of articles published in the Republic of Korea. As a result, positive psychological capital has a positive effect on the behavior of employees. Heterogeneity was identified among the studies included in the analysis and the context factors were analyzed; the study proposes contextual factors such as team tenure. The moderating effect of team tenure was not statistically significant. The implications were discussed based on the analysis results.

**Keywords**—Positive psychological capital, satisfaction, commitment, OCB, creativity, meta-analysis.

## I. INTRODUCTION

RECENTLY, the organization has a great interest in the positive psychological capital of its members. Research on positive psychological capital (or PsyCap) composed of hope, efficacy, resilience and optimism is actively being conducted [1], [2]. The purpose of this study is to investigate the flow of research on positive psychological capital in the Republic of Korea and to clarify the relationship with performance variables. The present meta-analysis included 43 independent samples (representing a total of  $N = 12,058$  employees). As a result, positive psychological capital has a positive effect on the attitude, behavior and creativity of the employees.

Positive psychological capital determines whether or not to undertake tasks, motivates them to perform them, and constantly strives to achieve them [3]. Since positive psychological capital has a generally positive effect on outcome variables, organizational managers should plan ways to activate and augment the positive psychological capital of their members [4]. In this way, it is necessary to analyze the whole research flow when the importance of positive psychological capital is increasing. The purpose of this paper is to identify the research flow of positive psychological capital and to draw the direction of future research.

Yoonjung Baek is with the School of Business Administration at Kyungpook National University, Daegu, South Korea (corresponding author, e-mail: yjbaek@knu.ac.kr).

Hyeondal Jeong is with the School of Business Administration at Kyungpook National University, Daegu, South Korea (e-mail: hdjeong@knu.ac.kr).

## II. THEORETICAL BACKGROUND AND HYPOTHESIS

### A. Positive Psychological Capital and Employee Outcomes

Positive psychological capital has been conceptually identified by Luthans and colleagues [1], [3]. The PsyCap concept contains four sub-concepts; these dimensions are hope, optimism, efficacy, and resilience [3].

Positive psychological capital has a positive effect on the satisfaction and commitment of the members [5]. In addition, positive psychological capital has positive effects on employee performance, job satisfaction, and organizational commitment [6], [7].

According to previous studies, PsyCap is positively related to employee attitudes and behaviors. A core explanatory mechanism for the effect of positive psychological capital on employee attitudes is that those higher in PsyCap expect optimism, efficacy, hope, and resilience [4]. In addition, positive psychological capital has negative effects on the stress and anxiety of members [8]. Therefore, we predicted as follows:

*Hypothesis 1. Positive psychological capital will be positively related to employee outcomes (satisfaction, commitment, OCB, innovation behavior, and individual creativity).*

### B. Potential Moderating Effect

The diversity of the members in the organization is increasing; a variety of team and work groups are employed in organizations. Therefore, the influence on the behaviors and attitudes of the members according to the organizational characteristics may be different. In this paper, it is important to clarify the context factor. In studies dealing with positive psychological capital, tenure positively correlates with the attitudes of employee [9]. Hence, we propose:

*Hypothesis 2. Tenure moderates the relationship between positive psychological capital and employee outcomes. That is, the longer tenure will have a more negative moderating effect.*

### C. Research Model

As previously discussed, a research model was set up. H1 is the relationship between PsyCap (positive psychological capital) and Employees outcome, H2 is investigating the moderating effect of tenure. The research model is shown in Fig. 1.

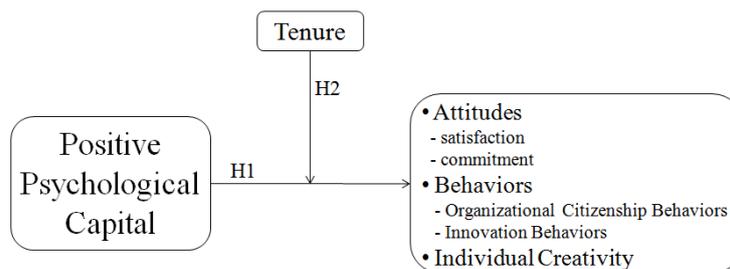


Fig. 1 Research Model

	A	B	C	D	E
1	No.	Study	n	r	dependent
2	1	Yang-1	243	0.522	satisfaction
3	2	Yang-2	243	0.566	commitment
4	3	Jeong-1	272	0.65	innovation
5	4	Jeong-2	272	0.701	satisfaction
6	5	Jeong-3	272	0.552	OCB
7	6	Kim-1	438	0.718	satisfaction
8	7	Kim-2	438	0.576	commitment
9	8	Yang.p-1	287	0.63	commitment
10	9	Yang.p.s-1	243	0.629	satisfaction
11	10	kim.m-1	138	0.61	commitment
12	11	Han.j-1	244	0.531	OCB
13	12	Han.j-2	244	0.574	commitment
14	13	Lee-1	156	0.702	commitment
15	14	Son-1	275	0.301	support
16	15	Son-2	275	0.667	support
17	16	Kim-j-1	312	0.643	OCB
18	17	Park-1	167	0.56	creativity
19	18	Park-2	167	0.42	commitment
20	19	Kim.y-1	295	0.475	satisfaction
21	20	Kim.y-2	295	0.549	commitment
22	21	Yoon-1	258	0.477	commitment
23	22	Jeong.s-1	298	0.413	commitment
24	23	Jeong.s-2	298	0.642	OCB
25	24	Kim.h-1	164	0.64	innovation
26	25	Lee.h-1	119	0.683	creativity
27	26	Kim.j-1	597	0.392	commitment
28	27	Jang.j-1	270	0.412	commitment
29	28	Jang.j-2	270	0.345	innovation
30	29	Han-1	161	0.36	commitment
31	30	Hur-1	288	0.62	creativity
32	31	Choi-1	332	0.637	creativity
33	32	Jeong.h.s-1	316	0.547	satisfaction
34	33	Kim.e.s-1	232	0.604	creativity
35	34	Cha-1	192	0.739	satisfaction
36	35	Jeong.j.g-1	316	0.512	innovation
37	36	Lee.m.h-1	416	0.68	OCB
38	37	Choi.i.s-1	445	0.557	creativity
39	38	Bae.s-1	223	0.498	career
40	39	Shin-1	441	0.709	commitment
41	40	Shin-2	441	0.637	OCB
42	41	Kim.d.y-1	231	0.603	satisfaction
43	42	Kim.d.w-1	237	0.716	commitment
44	43	Kim.d.w-2	237	0.388	commitment

Fig. 2 Coding of Studies

### III. METHOD

#### A. Literature Search

A literature search was conducted to identify published studies of positive psychological capital in the Republic of Korea from 2011 to 2016. Various databases were used to collect related studies. A computer search was done of RISS

(Research Information Sharing Service), KISS (Korean studies Information Service System), Google scholar and NDSL (National Digital Science Library). The specific words used to search these databases included positive psychological capital/satisfaction, positive psychological capital/commitment, positive psychological capital/outcomes, positive psychological capital/creativity, positive psychological capital/innovation. Through the data collection process, 63 studies were found. Only those studies that show consistency between independent (positive psychological capital) and dependent (employees outcome: satisfaction, commitment, OCB, innovation behavior and individual creativity) variables are used in the analysis. The final number of studies used in the meta-analysis was 31, yielding a total of 43 correlations (representing a total of N = 12,058 employees).

#### B. Coding of Studies

Prior to analysis, the collected studies are coded. In the coding work, major information such as research title, year of publication, researcher, major variables, correlation coefficient, and sample number are summarized. The summary is shown in Fig. 2. In the collected studies, the study name, number of samples, correlation coefficient and dependent variables were summarized. A total of 43 studies were collected.

### IV. RESULTS

#### A. Main Effects: Positive Psychological Capital and Employees Outcomes

Using the meta-analytic technique, we tested the main effects of positive psychological capital (PsyCap) on employee's outcomes as well as the moderating effects of tenure. Table I presents the main effect results. We first examined the correlations between PsyCap and Employees Outcome, significant result (Fisher' Z = 0.66, k=43, 95% CI = 0.61 to 0.71). The forest plot for the main effect is shown in Fig. 3.

TABLE I  
 MAIN EFFECTS: THE RELATIONSHIP BETWEEN POSITIVE PSYCHOLOGICAL CAPITAL AND EMPLOYEE OUTCOMES

	Effect Sizes(k)	Total Teams(N)	Fisher's Z	95% Confidence Interval	Q
Positive Psychological Capital	43	12,058	0.66	0.61, 0.71	317.65***

k = number of effect sizes; N = total sample sizes; Q is the effect-size heterogeneity statistic indicating the possibility of moderators (\*\*\*p<.001)

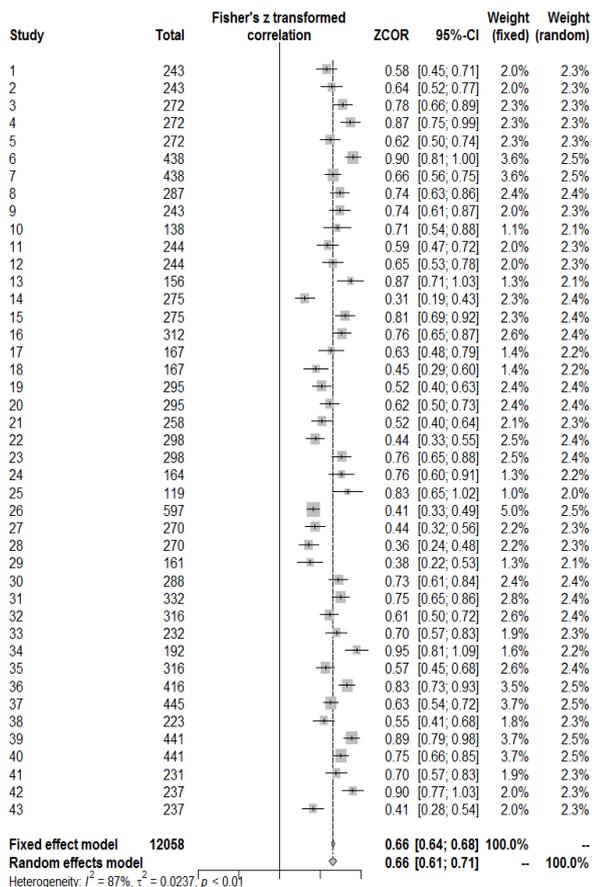


Fig. 3 Forest-Plot of Main Effect (PsyCap and Outcomes)

We then conducted separate analyses for employee's outcomes (satisfaction, commitment, OCB, innovation behaviors and individual creativity) and found a similar pattern

TABLE II  
MAIN EFFECTS: THE RELATIONSHIP BETWEEN POSITIVE PSYCHOLOGICAL CAPITAL AND EMPLOYEE ATTITUDES, BEHAVIORS, AND CREATIVITY

	Effect sizes (K)	n	Fisher'Z	95% CI	Q
Satisfaction	8	2,230	0.73	0.62, 0.85	50.46***
Commitment	16	4,467	0.61	0.52, 0.70	134.62***
OCB	6	1,983	0.73	0.65, 0.80	12.70**
Innovation Behavior	4	1,022	0.61	0.42, 0.80	28.07***
Individual Creativity	6	1,583	0.70	0.64, 0.76	6.21**

k = number of effect sizes; N = total sample sizes; Q is the effect-size heterogeneity statistic indicating the possibility of moderators (\*\*p<.01, \*\*\*p<.001)

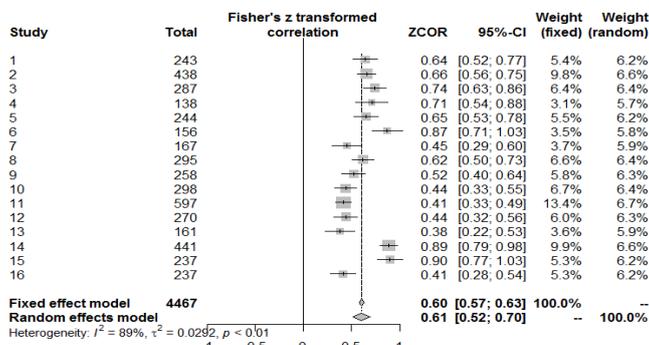


Fig. 5 Forest-Plot of PsyCap and Commitment

(Table II). The relationship between PsyCap and Satisfaction, Commitment, OCB, Innovation Behavior and Individual Creativity were positive and significant. Specifically, the relationship between PsyCap and satisfaction was positive and significant (Fisher' Z = 0.73, k=8, 95 % CI = 0.62 to 0.85). The relationship between PsyCap and commitment was positive and significant (Fisher' Z = 0.61, k=16, 95 % CI = 0.52 to 0.70). The relationship between PsyCap and OCB was positive and significant (Fisher' Z = 0.73, k=6, 95 % CI = 0.65 to 0.80). The relationship between PsyCap and Innovation Behavior was positive and significant (Fisher' Z = 0.61, k=4, 95 % CI = 0.42 to 0.80). The relationship between PsyCap and Creativity was positive and significant (Fisher' Z = 0.70, k=6, 95 % CI = 0.64 to 0.76). In summary, PsyCap has a positive effect on all dependent variables, thus H1 is all supported (Figs. 4-8).

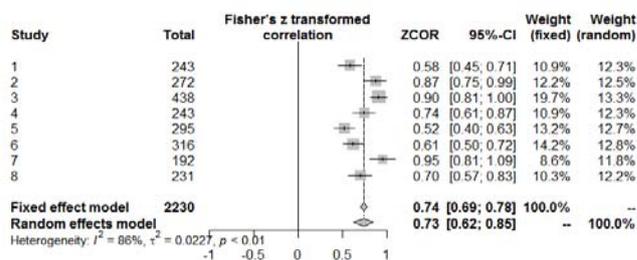


Fig. 4 Forest-Plot of PsyCap and Satisfaction

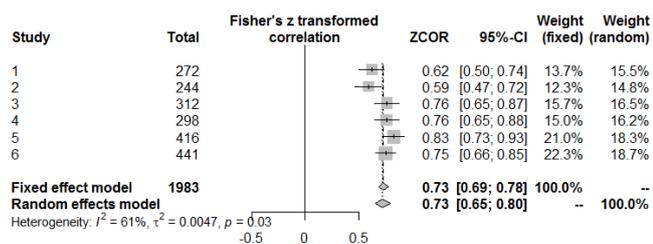


Fig. 6 Forest-Plot of PsyCap and OCB

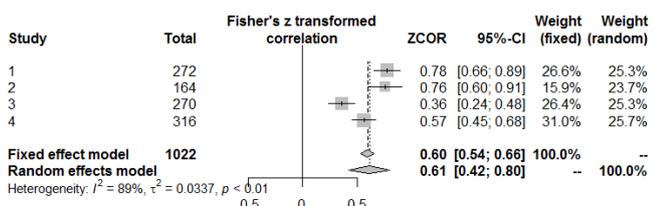


Fig. 7 Forest-Plot of PsyCap and Innovation Behaviors

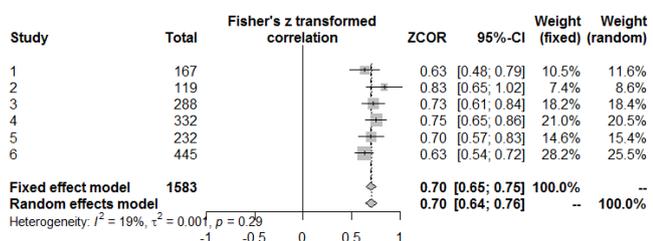


Fig. 8 Forest-Plot of PsyCap and Individual Creativity

### B. Heterogeneity of Effect-Sizes

Through heterogeneity analysis it is possible to predict the difference between the effect-size. From the analysis, the heterogeneity  $Q = 213.46$ , is analyzed with  $df = 29$ ,  $p < 0.001$ ,

$Q-df > 0$  could confirm the heterogeneity. Therefore, we analyze the moderator variable.

### C. Moderator Analysis: Tenure

We tested the heterogeneity of the effect sizes by calculating the Q-statistic [10]. A significant Q indicates the likelihood of moderator. In Fig. 1, Q values are statistically significant ( $Q = 317.65$ ,  $P < .001$ ), so we can deduce that there is a moderator variable. For the continuous moderator (tenure), weighted least squares (WLS) regression was used, by Hedges and Olkin (1985) [10]. Hypotheses 2 proposed that tenure moderated the relationship between PsyCap and Outcomes. Hypothesis 2 proposed that positive effects of PsyCap would be weakened in long tenure teams. The result, because it is not supporting all the slope coefficients and regression fit moderating effect of tenure, was rejected. Thus, Hypothesis 2 was not supported.

TABLE III  
 CONTEXTUAL INFLUENCE: TENURE

	Point estimate	Lower limit	Upper limit	Z-value	P-value
Intercept	0.7091***	0.5588	0.8595	9.2442	<.001
tenure	-0.0057	-0.0200	0.0086	-0.7768	0.4373

Fig. 9 shows that directionality is consistent but statistically insignificant results are derived and Hypothesis 2 is rejected.

### D. Publication Bias

Publication bias was statistically verified. Through this, it is checked whether there is a problem in the samples utilized in this study [11]. The results show that statistical publication bias is not serious (Fig. 10 and Table IV).

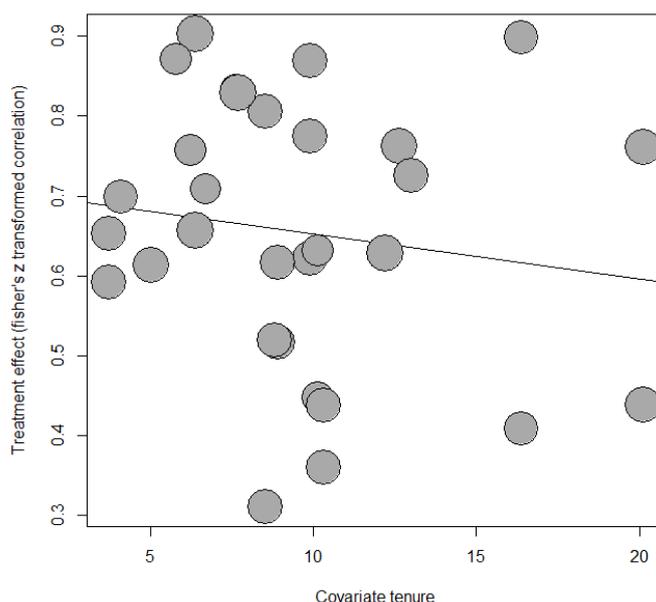


Fig. 9 Regression of tenure on Fisher's Z

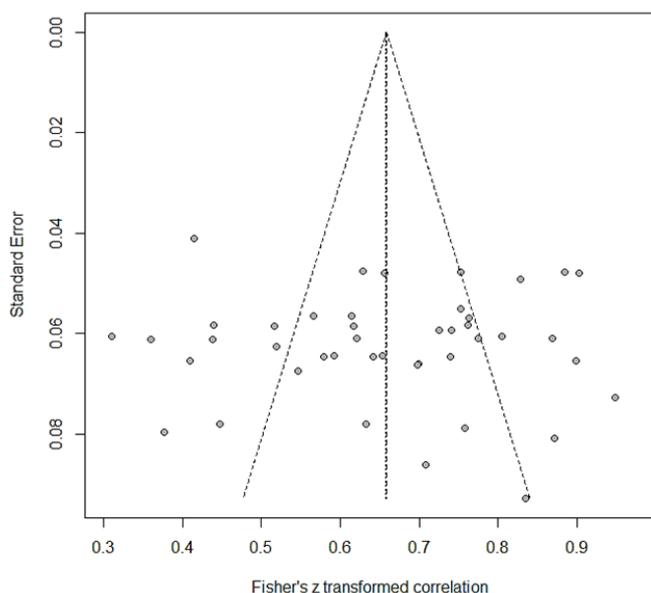


Fig. 10 Funnel Plot of Standard Error by Fisher's Z

TABLE IV  
 PUBLICATION BIAS: EGGER'S REGRESSION INTERCEPT

Intercept	0.6714
Standard error	2.5293
t-value	-0.085972
df	41
p-value	0.9319

#### V. CONCLUSION

This study analyzed the flow of positive psychological capital research published in the Republic of Korea. As a result, positive psychological capital has a positive effect on the attitude, behavior and creativity of the members. The moderating effect of tenure was also analyzed, but it was rejected because of not obtaining statistically significant results. Since this study confirmed the importance of positive psychological capital, the organization needs management to increase positive psychological capital. Positive psychological capital is potentially a positive influence on performance. Therefore, a positive organizational culture should be formed so that positive psychological capital can accumulate.

There are some limitations to this study. First, there are limitations that do not reflect various studies. Second, all of the studies used in the analysis are Korean studies. Third, it did not reflect various moderators. Future research therefore uses data from various countries to increase the number of samples. In addition, various moderators should be identified to elucidate various implications.

#### REFERENCES

[1] Luthans, F., & Youssef, C. M. (2004). Human, social, and now positive psychological capital management. *Organizational Dynamics*, Vol. 33, pp. 143-160.  
 [2] Luthans, F., Avolio, B. J., Walumbwa, F. O., & Li, W. (2005). The psychological capital of Chinese workers: Exploring the relationship with performance. *Management and Organization Review*, Vol. 1, pp. 249-271.

[3] Luthans, F., Youssef, C. M., & Avolio, B. J. (2007). *Psychological Capital: Developing the human competitive edge*. New York, NY: Oxford University Press, pp. 25-44.  
 [4] Avey, J. B., Reichard, R. J., Luthans, F., & Mhatre, K. H. (2011). Meta-analysis of the impact of positive psychological capital on employee attitudes, behaviors, and performance. *Human Resource Development Quarterly*, Vol. 22(2), pp. 127-152.  
 [5] Youssef, C. M., & Luthans, F. (2007). Positive organizational behavior in the workplace: The impact of hope, optimism, and resilience. *Journal of Management*, Vol. 33(5), pp. 774-800.  
 [6] Luthans, F., Avey, J. B., Smith, R. C., & Li, W. (2008). More evidence on the value of Chinese workers' psychological capital: A potentially unlimited competitive resource? *International Journal of Human Resource Management*, Vol. 19, pp. 818-827.  
 [7] Luthans, F., Norman, S. M., Avolio, B. J., & Avey, J. B. (2008). The mediating role of psychological capital in the supportive organizational climate-employee performance relationship. *Journal of Organizational Behavior*, Vol. 29, pp. 219-238.  
 [8] Avey, J. B., Luthans, F., & Jensen, S. (2009). Psychological capital: A positive resource for combating stress and turnover. *Human Resource Management*, Vol. 48, pp. 677-693.  
 [9] Wright, T. A., & Bonett, D. G. (2002). The moderating effects of employee tenure on the relation between organizational commitment and job performance: A meta-analysis. *Journal of Applied Psychology*, Vol. 87(6), pp. 1183-1190.  
 [10] Hedges, L. V., & Olkin, I. (1985). *Statistical methods for meta-analysis*. Orlando, FL: Academic Press.  
 [11] Hwang, S. D. (2014). *Meta-Analysis*. Seoul, Hakjisa.