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Association Between Psychological Capital and Subjective Wellbeing: A Systematic Review and Meta-Analytic Investigation

Pavan Kumar Tiwari¹, Shreni Kaushik²

¹Assistant Professor, Department of Commerce, S D Degree College, Muzaffarnagar, UP ² Shreni Kaushik, Doctoral Scholar, Faculty of Commerce, Banaras Hindu University

Abstract

This paper aims to perform a systematic review and meta-analytic investigation of previous empirical studies by examining and synthesizing the strength of association between psychological capital and subjective wellbeing and try to understand the heterogeneity across the studies by potential moderators. Electronic searches of literature on psychological capital and subjective wellbeing were performed via Scopus, google scholar, web of science, research gate, etc., and SLR was done as per PRISMA guidelines. The random-effect model was used to compute necessary statistics like effect size, moderating effects, publication bias, heterogeneity in the meta essential program.

Findings of this meta-analytic study revealed a large, significant, and positive correlation between psychological capital and subjective wellbeing (r=0.53; k= 42; 95% CI= 0.47- 0.59; P< 0.001). The effect size varied in the presence of moderators. This meta-analytic examination overcomes the research heterogeneity by synthesizing the correlation of all individual studies on psychological capital and subjective well-being to produce the correct and precise academic conclusion which will help further in the development of new hypotheses. One of the major limitations of this meta-analytic study is that it has utilized only empirical and quantitative studies. Further, all studies were collected only from a few databases electronic searches like Google scholars, research gate, web of science, Scopus, etc. which resulted in a limited number study for the analysis.

The findings of this Meta-analysis make some administrative recommendation for recognizing the importance of psychological capital to improve the subjective wellbeing of employees. Accordingly, the organization will either recruit employees having psychological capital/ resources or train them to acquire or enhance psycap with the motive to maintain higher SWB.

Keywords: Psychological Capital, subjective wellbeing, Meta-analysis, Psycap, Systematic review Paper Type: Research paper

1. Introduction

In the current scenario, employees' well-being is becoming a pertinent and inevitable consideration. As poor well-being of employees is connected with lower job satisfaction (Maxwell, 2015; Wright & Cropanzano,2000), decreased job performance, increased withdrawal behavior (Katarzyna et al., 2021; Eisenberger, 2008), lower retention ratio (Coates & Howe, 2015), reduced employees commitment (Panaccio & Vandenberghe, 2009; Garg & Rastogi, 2009; Abate et al. 2018; Anvari et al. 2012), low



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productivity (Krekel et al. 2019; Markey et al. 2008; Dewa, 2014), lower creativity (Yuan, 2015) and more absenteeism (Johns, 2009; Prottas, 2008). Therefore, creating and maintaining a work environment that contributes to the employee's well-being is beneficial for both organization and employees (Roemer, 2018) but, in spite of working in the same organization and having the same work environment, employees' well-being may differ significantly because of individual differences among employees (Mäkikangas et al. 2013). One unique resource that may cause individual differences is psychological capital (Laschinger, 2014). So, apart from a healthy work environment, the organization must also consider employees' psychological strengths & resources/ capital (Polatci, 2014), because both a Healthy work environment and positive psychology (positive organization behavior) are prerequisites for employees' wellbeing. A healthy work environment exists where workers are treated with respect, achieve high performance and the employers are committed to promoting the physical and psychological/ mental health & well-being of their employees (Day et al. 2014). Positive psychology is the study and application of human thoughts, feelings & emotions, and behavior by focusing on human resource strengths instead of weaknesses (Peterson, 2008; Quick et al. 2010). Psychological Capital has emerged as one of the most crucial and contemporary topics of positive psychology, which comprises four core constructs, that are efficacy- is self-confidence in one's competence to perform a given challenging task to attain a prespecified goal; resilience- it is the ability to recover from unfavourable situation and get back to the routine when surrounded by troubles, distress, and adversities; optimism- is a positive viewpoint or outlook about current performance and future events; Hope- being on track toward the goal and when required, reapproaching, and adopting a new way to pursuit the desired goal. (Afzal et al. 2014; Luthans et al. 2007; Huang et al. 2021). As per Eurostat (Quality of life-Facts and view): Positive psychology believes that psychological resources or capitals are people's strengths that enable them to improve their psychological and subjective wellbeing.

Well-being is a multifaceted concept and is affected by both objective and subjective factors that incorporate the appraisal of emotional, social, functional, and physiological aspects of an employee (Santisi et al. 2020; Brock,1993) and can be further classified into eudaimonic well-being and hedonic wellbeing (Culbertson, 2010), psychological wellbeing, workplace/ occupational wellbeing and subjective wellbeing (Singh, 2015). Subjective wellbeing (Hedonic wellbeing) is the employee's self-assessment of his or her own life (both personal and professional), these assessments cover both cognitive evaluation (components that delas life satisfaction) and affective/ emotional evaluation (experience of constructive & destructive emotions and moods) to events (Diener, 1997). The word "subjective" indicates the intrinsic perspective of a person without considering any extraneous standard. It measures a person's firm feelings and perception about wellbeing has three dimensions; Life satisfaction, higher positive effects, and reduced negative effects (Diener et al. 1999).

In the starting, studies regarding the employee's wellbeing were given more attention to objective factors like income, workable work environment, tenure of services, etc. but diagnosis and understanding of psychological capital have shifted the focus from objective evaluation to subjective assessment of these aspects, as a result, organization nowadays felt that the good & active psychological/ mental status of employees and positive frame of mind play an equivalent and significant role in the wellbeing and productivity of an organization just like other key factors such as human resource, financial resources and social network (Hodges, 2010). The encounter of psychological capital by employees makes them creative, emotionally strong & intelligent (Singhal et al., 2017; Salovey et al., 2002) which ultimately



leads to the subjective well-being of employees (Lewis et al., 2011). The organization needs to leverage its employee's psychological resources which further helps in maintaining hopefulness, trust, positivity, confidence/ efficacy, resilience, and optimism in employees (Luthans et al. 2017). Employees having higher psychological capital and strengths are happy with their work and delighted with their life which shows a state of wellbeing (Avey, 2010). This meta-analytic study investigates the role of psychological capital in subjective wellbeing under demographic moderators without restriction regarding sector specificity.

2. Literature Review:

2.1 Psychological Capital and Subjective Wellbeing:

Psychological capital consists of four core constructs/ elements: - efficacy, hope, optimism, and resilience. Jointly these four elements function as employees' intellectual resources that have a positive relationship with subjective wellbeing (**Culbertson et al. 2010**).

Employees having high self-efficacy have confidence about their capabilities to perform given task successfully and research shows that employees having high self-efficacy experience fewer diffidence & complication, and report lesser criticism & (**Bandura et al. 2003**), higher life- satisfaction, and more positive emotions as compared to those who have low self-efficacy (**Caprara et al. 2005**). From this point of view employees with self-efficacy are expected to exhibit greater positive effects, lower negative effects, and higher satisfaction with life.

Findings of the several pieces of research show that hope exercises a direct impact on subjective wellbeing (**Davidson et al. 2012**), Similarly, it has a significant direct relationship with satisfaction with life, positive effects, and reduced negative effects (**Muyan-Yılık et al. 2019**). Therefore, it can be successfully concluded that people who have a high level of hope exhibit innovative behavior and greater endeavor for achieving their aim which ultimately leads to a higher level of subjective wellbeing by obtaining more positive outcomes (**Snyder et al. 2000**).

In the same manner, optimism is also positively related to SWB because it reduces the stress level by marshaling positive emotions (**Scheier et al. 2001**). According to COR theory optimism is like a person's intellectual resources having a positive association with happiness and positive effects (**Hobfoll et al. 2000**). Thus, it can be safely concluded that individuals with a greater degree of optimism are expected to attain greater happiness and positive functioning.

The last dimension of psychological capital is resilience and there are several pieces of research whose findings revealed that resilience has a positive effect on subjective well-being (Maddi, 2016; Yildirim et al. 2019; McDonald et al. 2020). Thus, based on the findings of the above-mentioned studies resilience can be linked with subjective wellbeing.







- 3. Objective and Hypotheses of the Study
- 1. To examine and solidify the strength of association between psychological capital and subjective wellbeing through meta-analysis.
- 2. To explore the subgroup and moderating effect of demographic on the relationship between psychological capital and subjective wellbeing.

Based on the previous literatures and the objectives of the study following hypothesis is postulated: H0: Psychological capital is positively related to subjective wellbeing.

H01: Moderators and subgroup will strengthen/ weaken the relationship between psychological capital and subjective wellbeing.

6. Research Methodology

6.1 Literature Search: To get wide coverage of literature, the author has conducted online searches of several electronic databases and web-based search engines like Scopus, Google Scholar, web of science, research gate, Shodh Ganga with the restrictions regarding timespan from 2009 to 2021. The author has carried out electronic searches by combining two key terms: **psychological capital** and **subjective well-being**. An electronic search on google scholar identified 64,200 records, web of science resulted in 1,191 records, and Scopus identified 89 records. Studies were excluded if they were not pertinent to the present meta-analysis. At the end of this exclusion and inclusion process, only 42 studies remained for further examination. Apart from electronic searches, the author has also performed manual searches of references given in the review paper and empirical studies by using the snowball search method. The investigation gets started in December 2021.



The author has conducted SLR by extracting the necessary information from relevant research papers. An excel file was created for keeping a record of extracted information about the following attributes: authors name and publication year, the country in which the study was performed, number of participants, percentage of females in the sample, and the value of the correlation coefficient. The systematic literature review was performed as per the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guideline.

6.2 Inclusion and exclusion criteria: Only those studies were included in this meta-analysis that has met certain established/ prespecified criteria: Only those studies were taken into account which was empirical and all theoretical and review papers have been excluded. The author has included all types of studies both cross-sectional and longitudinal conducted both in India and outside India. The empirical studies were included only when the value and direction of a correlation coefficient or association were either directly given in the correlation matrix or it was possible to calculate from the information provided. The author has restricted his selection of studies with a timespan from 2009 to 2021. To be eligible for meta-analysis the article or study must have been written in English. The author has also restricted his inclusion based on the sample size, A minimum of 30 respondents should have been included.

6.3 Coding of studies: The studies that remained after the exclusion, have been reviewed and coded by extracting the following: Authors name, sample size denoted by N, value, and direction of the correlation coefficient denoted by "r", Average age (continuous variable) of the respondents, female percentage in the sample, a professional groups in which respondents were involved or worked, the country in which study was conducted, year of publication, study design, and independent & dependent variable. Studies were coded twice independently by the same author and then compared, there was no significant deviation. This was done to conserve consistency and improve reliability.

6.4 Quality Assessment: The author has checked the quality of studies based on different parameters like research design (empirical, cross-sectional, longitudinal), population framework (representativeness), sampling method (probability, non-probability), reliability, and validity of different measures of psychological capital; and subjective wellbeing. The same process has been repeated one more time to ensure and improve the validity and reliability respectively. First of all, the author has checked the quality of the research design, the majority of the studies found empirical. Thus, categorized as high-quality studies for meta-analysis. The next quality checking was of sampling method, most of the studies included, have adopted random sampling method. In the last, the quality of measurements of psychological capital and subjective wellbeing has been tested by using the Alpha coefficient (a measure of internal consistency).

6.5 Meta-Analytic procedure: All statistical calculations like weighted average effect or summary effect, moderating effect, publication bias, and heterogeneity across the studies were investigated with the help of a program called Meta-essential (version 1.5). The random effect model has been used to compute the total effect size. Overall or combined effect size was calculated by assigning a weight to the effect size (r) of individual studies according to their sample size. The author has acted under the guidance provided in the book of Hunter & Schmidt (2004). The sequence of statistical calculation for meta-analysis was as follows: Forest plot, moderator analysis using meta-regression, publication bias by funnel plot, egger regression, Begg & Mazumdar.

6.6 Data Assumption and Decision Rule: Assumption of data and decision criteria adopted at the stage of coding and analysis could affect the quality of meta-analysis and ability to interpret. So, to make this



analysis free from this judgment dilemma, the author had adopted a fixed standard procedure. In this investigation, the author dealt with only one judgment problem.

6.6.1 Missing Data: The study has assumed to avoid impractical data because of absent information. Some studies have provided a dimension-wise correlation between psychological capital and subjective wellbeing, in this case, pooled correlations were calculated by taking an average of dimension-wise correlation.



Figure 2: Methodology for Meta- Analytic Investigation

7. Results:

7.1 Descriptive statistics/ characteristics/ Descriptions of studies: Table 1 shows the summary description of 42 studies included in this meta-analytic examination. All studies were empirical. A total of 17,998 participants were included from 16 countries. 6 studies were conducted in China, 5 studies in Iran, 4 studies in the USA, 3 studies in India, 3 studies in Australia, and the rest of the studies were conducted elsewhere. Sample sizes got vary from 43 to 1757 with an average of 418.55. The participant's average age was 28.47 years (Range = 12-45). Effect size/ correlation of included studies varied from 0.11 to 0.8. Participants were from the various sector or professional groups including education, hospitality,



manufacturing sector, health care provider, banks employees, general population, and mixed or multiple sectors.

Table 1: Summary Descriptions of Included Studies for Meta-Analysis					
Studies (year)	Country	N (F%)	Average	Sector	
			Age		r
HONGYU MA, 2014	China	381(70.34%)	19.81	H. Education	0.35
Mahlagha	Iran	250(38%)	38.00	Hospitality	0.77
Darvishmotevalia,					
2020					
Hansika Singhal, 2017	India	300(41.66%)	-	Manufacturing	0.43
				workers	
Najma Malik, 2014	Pakistan	640(50%)	15.53	School	0.42
Liang Huang, 2021	China	515(72.62%)	19.00	University	0.29
Jules Finch, 2020	China	456(47%)	12.00	School	0.68
Satoris S. Culbertson,	USA	1021(66%)	41.00	Event planners	0.41
2010					
Andrea Soykan, 2019	New	1502(89%)	-	Teachers	0.72
	Zealand				
James B. Avey, 2010	USA	280(49%)	31.70	General public	0.47
Ingrid Nielsena, 2016	Australia	143(49%)	25.00	University	0.77
				students	
Ofra Walter, 2021	Israel	257(76.3%)	29.30	Students	0.44
Giuseppe Santisi, 2020	Italy	807(54.8%)	39.64	-	0.48
Agota Kun, 2019	Hungary	297(70.7%)	41.40	Teachers	0.52
Yongzhan Li, 2018	China	429(72.25%)	-	Teachers	0.45
Fariborz Rahimniaa,	Iran	296(70.34%)	32.00	Nurses	0.51
2013					
Jesus Alfonso D. Datu,	Philippines	606(50.33%)	13.87	Students	0.54
2016					
Jong Gyu Park, 2015	South	285(31.2%)	33.90	Corporate	0.80
	Korea			employees	
Uzma Gilani, 2019	Pakistan	276(42%)	29.00	NGOs	0.48
				employees	
Yajna Singh, 2013	South	110(80%)	36.00	Teachers	0.30
	Africa				
Xueyan Zhao, 2019	China	729(73.8%)	-	Teachers	0.29
Anja Roemer, 2018	South	159	-	Corporate	0.65
	Africa			employees	
Asghar Jafari, 2017	Iran	123	_	Hospital	0.36
Manish Gupta, 2017	India	200(50%)	-	Hospital	0.75



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Murat Yıldırım, 2020	Turkey	220(39.09%)	39.50	General	0.50
				population	
Fidelia Ntombifuthi,	South	100(72%)	-	Nurses	0.56
2016	Africa				
Annita Gibson, 2018	Australia	121(61.2%)	43.00	Mixed	0.66
D.F. Fachruddin, 2012	Indonesia	502	45.00	Banks	0.33
				employees	
Boris Nikolaev, 2020	Mixed	1715	_	Entrepreneurs	0.79
A.J. McMurray, 2009	Australia	43(66.6%)	_	NPO	0.68
Leon T. B. Jackson,	South	227(68%)	_	Students	0.41
2014	Africa				
Fei He, 2013	China	410(24.63%)	25.24	Patients	0.41
Emma Pleeging	USA	338(45%)	-	-	0.41
Sarita Sood	Iran	200(68%)	29.79	Banks	0.51
				employees	
Emel Genç	Turkey	331(64%)	20.86	College students	0.60
Peter D. Harms	USA	523(40.3%)	-	university	0.43
				employees	
Mohammad Reza T.	Iran	355	43.00	University	0.11
				students	
Yongtao Gan, 2021	China	759(49.6%)	-	Preschool	0.68
				teachers	
Faizan Ali, 2020	Iran	350(98.95%)	33.00	Hotel	0.30
Marco Weber, 2012	Israel	396(49.7%)	42.00	adolescents	0.35
Ruiming Liu, 2018	China	1757(100%)	15.76	Hospital	0.64
Eleni P. Samsari, 2019	Greece	300(49.33%)	31.57	General	0.80
				population	
Conghui Liu, 2018	China	208(71.6%)	-	Corporate	0.44
				Employees	

7.2 Overall Effects size of psychological capital on subjective wellbeing: Figure 3 shows the forest plot, a visual representation of overall, and pooled/ combined effect size or association between psychological capital and subjective well-being. The Forest plot exhibited a large (as per Cohen's criteria), positive, and significant effect size (single weighted mean correlation = 0.53; k= 42; 95% CI= 0.47- 0.59; I²= 96.71%; Q= 1247.97; P< 0.001, **see table 2**). This meta-analytic examination revealed that psychological capital had a noteworthy positive association with subjective well-being with a high degree of inconsistency. As per the prediction in the hypothesis, psychological capital is positively associated with subjective wellbeing. Thus, the results of the meta-analysis do support the hypothesis.



	Table 2: Meta-Analysis of Psychological Capital and Subjective Wellbeing.					
	k	r	95% CI	${ m I}^{2}(\%)$	Q	
SWB	42	0.53	0.47- 0.59	96.71%	1247.97	P< 0.001

Figure 3: Forest plot showing meta-analysis of the association between psychological capital and subjective wellbeing.



7.3 Heterogeneity and moderator analysis: I^2 - statistic demonstrated a considerable heterogeneity ($I^2 = 96.71\%$, **see table-3**) which indicates the presence of moderators in the relationship between psychological capital and subjective wellbeing (**Borenstein et al. 2009**). Furthermore, moderator analysis has been conducted for 27 studies to assess the effect of participants' age on the relationship between psychological capital and subjective wellbeing. 15 studies were excluded because of the non-availability of the average age of participants. The same process has been repeated to examine the moderating role of female percentage, types of occupations, cultures, publication years. Analysis has been done by using meta-regression, Q-statistic, subgroup analysis.

Participants' Average Age and Female percentage as moderators: Table 3 shows heterogeneity across the studies, table 4 shows the contribution of participants' age and female percentage in the sample as moderators into total heterogeneity. The horizontal axis represents participants' average age and female percentages in Figures 2a and 2b respectively and the vertical axis depicts the value of correlation in both the figures. Results of the meta-regression revealed that both participant age and female percentage did not have any definite effect on the relationship between psychological capital and subjective wellbeing as explained by R^2 , which were in this case, 0% and 0.39% respectively.

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Table 3: Heterogeneity Analysis			
Q	I ² (%)	$\mathbf{T}^{2}\left(\mathbf{Z} ight)$	T (Z)
1274.97	96.71%	0.07	0.27

Table 4: Shows the Explanation provided by moderators into total heterogeneity.

Moderators	Heterogeneity in % (I ²)	Explained Variation (R ²)
Participants Mean Age	96.71%	0%
Female percentage	96.71%	0.39%

Figure 4: Meta-regression depicting the role of participants' age and female percentage as moderators on the association between psychological capital and subjective well-being in the figure 2a and 2b respectively, Note- Blue circle shows the studies, and the size of the circle depicts its contribution to the overall effect size.



Moderator (Subgroup) Analysis of Professional Group: To investigate the moderating effect of professions or occupation on the effect size of the relationship between psychological capital and subjective wellbeing, four subgroups of studies were created: 1. Studies conducted on the corporate employee; 1. Studies whose respondents were students; 3. Studies on teachers; 4. Studies, conducted on other professional groups. Types of occupations explained only 2.97% of total heterogeneity which indicated that effects size was not dependent on the type of professional group or occupation (see table 7 & 8).

Table 5. Descriptions of Subgroup			
No. of Included	No. of Included	No. of Subgroup	
Subjects	Studies	(4)	
17998	42	C= Corporate employees	
		S= Students	
		T= Teachers	
		O= Others	

n



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Table 6: Results of Subgroup Analysis			
Analysis of	Sum of Square df p		
Variance	(Q)		
Between/ Model	1.02	3	0.798
Within/ Residual	33.17	38	0.692
Total	34.18	41	0.766
	Table 7: Explaine	d variation	
Pseudo R ²		2.97%	

Moderator (Subgroup) Analysis of culture: The explanation provided by types of occupation as moderator was not satisfactory as explained above so the author proceeded ahead by examining whether regions, where the research took place, were affected the effect size for the relationship between psychological capital and subjective wellbeing. Studies have been divided into two subgroups: 1. Western Culture; 2. Other Cultures. Results revealed that culture played only 0.33% in overall heterogeneity which indicated that culture was not a cause of this heterogeneity (see table 10 & 11).

Table 8:	Description	of Subgroup
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No. of participants	No. of Included	No. of Subgroup
	Studies	(2)
17998	42	W= Western Culture
		O= Other Culture

Table 9: Results of Subgroup Analysis			
Analysis of	Sum of Square	df	р
Variance	(Q)		
Between/ Model	0.13	1	0.718
Within/ Residual	39.14	38	0.418
Total	39.27	39	0.458
Table 10: Explained Variation			
Pseudo R ²		0.33%	

Moderator (Subgroup) Analysis of Publication Years: Yet, the author had not any conclusive evidence to explain the heterogeneity. So, moderation analysis has been conducted once again for publication years. Studies were categorized into three categories: 1. Group A, which incorporated all the studies published from 2009 to 2013; 2. Group B included studies from 2014 to 2017; 3. Group C comprised studies published from 2018 to 2021. Results suggested that the year of publication explained 21.01% of the total inconsistency indicating that publication year might be the cause of heterogeneity but not significantly affected the effect size (see table 12 & 13).



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No. of Included	No. of Included	No. of Subgroup
Subjects	Studies	(3)
17998	42	A= 2010 – 2013,
		B= 2014 - 2017,
		C = 2018 - 2021.

Table 11: Shows the Description of Subgroup

Table	12.	Showe	the	Reculte	of	Subgrour	Anal	veie
I adie	12.	SHOWS	une	Results	or	Subgroup	Allar	y 515

Analysis of	Sum of Square	df	р
Variance	(Q)		
Between/ Model	10.58	2	0.005
Within/ Residual	39.78	39	0.435
Total	50.36	41	0.150

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Pseudo R<sup>2</sup>
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Figure 5: Shows the Subgroup Analysis of the publication year.

21.01%

# Study name / Subgroup name *	orrelation C	1 Louron limit	Ci Unnor limit	Weight	0	n 1 ²	-2	-	0111								Correlation	1			1.212.21	
· Study name / Study name /	orrelation c	a Lower name	ci opper mini	weight	ų	PQ I	1940		PILL	PIOL	-0.	10 0.0	00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90
1 Satoris S. Culbertson, 2010	0.41	0.23	0.56	7.14%							1				⇒							
Z James B. Avey, 2010	0.47	0.37	0.56	12.14%							2								-			
3 Fariborz Rahimniaa, 2013	0.51	0.42	0.59	12.41%							3						+					
4 Yajna Singh, 2013	0.30	0.12	0.46	7.50%							4							-				
5 Dini Fatturanmi Fachruddin, 201	0.33	0.25	0.41	14.69%							5						<u> </u>					
6 A.J. McMurray , 2009	0.68	0.47	0.82	3.67%							6							·				
7 Fei He, 2013	0.41	0.33	0.49	13.87%							7					+						
8 Fred Luthans, Carolyn M. Yousse	0.43	0.36	0.50	14.85%							8											
9 Marco Weber, 2012	0.35	0.26	0.43	13.72%							9					-						
10 A	0.42	0.34	0.49	38.26%	20.70	0.008 61.3	5% 0.01	L 0.08	0.25	5 0.56	10					-	-	-	-			
11 HONGYU MA, 2014	0.35	0.26	0.44	8.54%							11					-	• •					
12 Hansika Singhal, 2017	0.43	0.33	0.52	8.46%							12							-				
13 Najma Malik, 2014	0.42	0.35	0.48	8.66%							13						-	-				
14 Ingrid Nielsena, 2016	0.77	0.69	0.83	8.08%							14											
15 Jesus Alfonso D. Datu, 2016	0.54	0.48	0.59	8.65%							15											
16 Jong Gyu Park, 2015	0.80	0.75	0.84	8.44%							16											
17 Asghar Jafari, 2017	0.36	0.19	0.51	7.96%							17				·							
18 Manish Gupta, 2017	0.75	0.68	0.81	8.28%							18									-		
19 Fidelia Ntombifuthi, 2016	0.56	0.41	0.68	7.78%							19						-			-		
20 Leon T. B. Jackson, 2014	0.41	0.29	0.51	8.35%							20					+						
21 Sarita Soos and Arti Bakshi	0.51	0.40	0.61	8.28%							21											
22 Mohammad Reza Tamannaeifar	0.11	0.01	0.21	8.52%							22				_							
23 B	0.53	0.38	0.65	27.13%	249.97	0.000 95.6	0% 0.08	0.28	-0.05	0.84	23	1	2	120	1			-		-		
24 Mahlagha Darvishmotevalia, 202	0.77	0.71	0.82	4.69%							24							-		· -		
25 Liang Huang, 2021	0.29	0.21	0.37	4.83%							25				-							
26 Jules Finch, 2020	0.68	0.63	0.73	4.81%							26								H-			
27 Andrea Soykan, 2019	0.72	0.69	0.74	4.92%							27										6	
28 Ofra Walter, 2021	0.44	0.34	0.53	4.70%							28											
29 Giuseppe Santisi, 2020	0.48	0.42	0.53	4.88%							29						-					
30 Agota Kun, 2019	0.52	0.43	0.60	4.74%							30						-	-				
31 Yongzhan Li, 2018	0.45	0.37	0.52	4.81%							31											
32 Uzma Gilani, 2019	0.48	0.38	0.57	4.72%							32								-			
33 Xueyan Zhao, 2019	0.29	0.22	0.36	4.87%							33				-							
34 Anja Roemer, 2018	0.65	0.55	0.73	4.55%							34									• • •		
35 Murat Yıldırım, 2020	0.50	0.39	0.59	4.66%							35						-					
36 Annita Gibson, 2018	0.66	0.54	0.75	4.42%							36								-		-	
37 Boris Nikolaev, 2020	0.79	0.77	0.81	4.93%							37											
38 Emma Pleeging & Martijn Burger	0.41	0.32	0.50	4.76%							38					F						
39 Emel Genç and Gökmen Arslan	0.60	0.53	0.67	4.76%							39							-		-		
40 Yongtao Gan, 2021	0.68	0.64	0.72	4.88%							40											
41 Faizan Ali, 2020	0.30	0.20	0.39	4.77%							41				-							
42 Ruiming Liu, 2018	0.64	0.61	0.67	4.93%							42					10			-	-		
43 Eleni P. Samsari, 2019	0.80	0.75	0.84	4.74%							43											
44 Conghui Liu, 2018	0.44	0.32	0.54	4.64%							44					E C		_				
45 C	0.57	0.49	0.65	34.61%	758.75	0.000 97.3	5% 0.07	0.26	0.05	0.84	45			-				-	0			
46 Combined effect size	0.51	0.40	0.60	1	1247.97	0.000 96.7	1% 0.07	0.27	0.28	0.68	46					-	-	0	-	-		

7.4 **Publication Bias:** Publication bias refers to a condition of accommodating or preferring studies that have statistically significant effect size and eliminating null studies (r=0) in the publication process. It has been detected by using a funnel plot and conducting an Egger regression test. In the funnel plot in **figure** 6, X-axis represents effects size while Y-axis represents standard error. Due to the high level of heterogeneity, the results showed by the funnel plot couldn't be interpreted with precision. Thus, it is



recommended that publication bias should be performed and interpreted only if heterogeneity (I^2) is below 75% (ERIM, Meta essential: Workbook for meta essential).

Table 14: Showing Results of Egger Regression Test.

	Estimate	SE	CI (LL)	CI (UL)
Intercept	3.29	5.92	-8.68	15.25
Slope	-0.30	1.62	-3.57	2.97

Table 15: Egger regression

t-test	0.55
p-value	0.58

Table16: Begg & Mazumdar Rank Correlation

Δ _{x-y}	Kendall's Tau a	z-value	Pz
119	0.14	1.29	0.197



Figure 6: Funnel Plot Showing Publication Bias

Discussion:

This meta-analytic examination summarizes the relevant information collected from 42 studies of psychological capital and subjective wellbeing and offers an integrative result with more accuracy and reliability. The finding suggests that psychological capital plays a significant role in higher subjective wellbeing (effect size = 0.53; k= 42; 95% CI= 0.47 - 0.59; I²= 96.71%; Q= 1247.97; P< 0.001). Due to the high level of heterogeneity ($I^2 = 96.71\%$) in original studies, moderating effects of demographics have been examined. As per the result, the average age of participants (0%), the female percentage (0.39%),



types of occupation (2.97%), and culture (0.33%) did not have any definite moderating effect on the effect size but publication years (21.01%) slightly explained the reason for heterogeneity in the original studies but it was not that significant. Results of subgroup analysis indicate the largest effect size among corporate employees (0.58). The effect size was more or less similar in both cultures/regions. The strongest association has been detected in the most recent studies (2018 to 2021). Thus, the role of the professional group, gender, and publication years must be taken into account in the prospective review and meta-analysis. Publication bias couldn't be estimated with precision due to the high level of heterogeneity across the studies (**ERIM**, **Meta essential: Workbook for meta essential**).

Limitations and Future Directions:

Before drawing conclusions, this meta-analysis required unveiling some of the limitations of the included studies; 1. Most of the studies utilized in this meta-analysis were cross-sectional design. Thus, effect size indicates only an association not a causal relationship between psychological capital and subjective wellbeing; 2. Data were collected only from a few databases electronic searches like Google scholars, research gate, web of science, Scopus. Thus, this study does not provide surety for the inclusion of all studies that reported the relationship between psychological capital and subjective wellbeing; 3. The meta-analysis could not collect adequate evidence to explain heterogeneity across the studies despite a series of moderation analyses. Limitations of the studies may encourage further research in the future. first, As mentioned above in the limitation section, most of the studies were cross-sectional design, this encourages future studies to utilize longitudinal design or data because it provides ground to predict causal relationships. Second, Other moderators needed to examine for PsyCap and SWB relationship because there could be several other moderators apart from what were analyzed. Third, the study has drawn a conclusion based on a few original studies (42) so, for future review and meta-analysis, it is recommended to include more studies.

Practical Implication:

The findings of this Meta-analysis make some administrative advice for recognizing the importance of psychological capital to improve the subjective wellbeing of employees. Accordingly, the organization will either aid the psychological capital assessment program in the selection process or launch intervention to enhance the psychological strengths or capital of the staff. It could be favorable for both organization and employees.

Conclusion:

Despite the above-mentioned limitations, this study provides a fresh perspective and exhaustive coverage for the present stock of research on the association between psychological capital and subjective wellbeing. Overall, the study provides evidence-based support that the data/ information collected from previous literature and its meta-analytic examination indicates a strong and positive association between psychological capital and subjective wellbeing, and improving psychological capital among staff is one of the ways to enhance their subjective wellbeing. A high level of heterogeneity across the original studies was observed. Participants' age, the female percentage, and culture did not have any definite impact on effect size while publication years explained a little bit of cause for heterogeneity. Larger effect sizes were detected among corporate employees and in most recent studies. The analysis recommended that



publication bias is not pertinent in this meta-analysis due to the high level of heterogeneity across the original studies.

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