

A Meta-Analysis of the Impact of Leadership Styles on Employee Psychological and Work-Related Outcomes

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Abstract

This study examines the relationship between different leadership styles and employee psychological and work-related outcomes through a meta-analytic approach. Specifically, the study compares transformational, transactional, and laissez-faire leadership styles and evaluates their associations with employee outcomes such as job satisfaction, job performance, perceived job security, and related psychological factors. A random-effects meta-analysis was conducted using data extracted from 22 empirical studies across multiple sectors and regions. Effect sizes were calculated using Pearson's correlation coefficients and transformed into Fisher's z scores for analysis. The results indicate that transformational leadership demonstrates the strongest positive relationship with employee psychological and work-related outcomes, followed by transactional leadership. In contrast, laissez-faire leadership shows a weak and non-significant relationship with these outcomes. The findings suggest that leadership style plays a critical role in shaping positive employee outcomes, with transformational leadership being the most effective among the styles examined.

Keywords: Transformational Leadership, Transactional Leadership, Laissez-faire Leadership, Employee Outcomes, Meta-Analysis

Introduction

Leaders play a critical role in shaping employee attitudes, behaviors, and overall organizational effectiveness. In increasingly competitive and dynamic organizational environments, leadership styles influence not only performance outcomes but also employees' psychological experiences at work, including satisfaction, motivation, and

perceived security. Organizations therefore seek leadership approaches that foster positive employee outcomes while sustaining productivity and long-term performance.

Among the most widely studied leadership approaches are transformational, transactional, and laissez-faire leadership styles. Transformational leadership emphasizes inspiration, empowerment, and intellectual stimulation, encouraging employees to exceed expectations and actively contribute to organizational goals. Transactional leadership, by contrast, focuses on structured exchanges between leaders and employees, relying on rewards and corrective actions to ensure compliance and performance. Laissez-faire leadership represents a passive approach in which leaders provide minimal direction and allow employees substantial autonomy.

Previous empirical studies have examined the relationship between these leadership styles and various employee-related outcomes, such as job satisfaction, job performance, commitment, and perceived psychological well-being. However, findings across individual studies vary in magnitude and consistency, partly due to differences in organizational contexts, measurement approaches, and sample characteristics. As a result, there is a need for a systematic quantitative synthesis that integrates existing evidence and provides a clearer understanding of the relative effectiveness of different leadership styles.

This study addresses this gap by conducting a meta-analysis of empirical research examining the relationship between leadership styles and employee psychological and work-related outcomes. By statistically synthesizing results across multiple studies and contexts, this research aims to provide more robust and generalizable conclusions regarding how leadership styles influence employees in organizations.

Research Questions

The primary research question guiding this study is:

How do different leadership styles influence employee psychological and work-related outcomes across organizational contexts?

To address this question, the study focuses on the following sub-questions:

1. What is the strength of the relationship between transformational leadership and employee psychological and work-related outcomes?
2. How does transactional leadership relate to employee psychological and work-related outcomes?
3. What is the nature of the relationship between laissez-faire leadership and employee psychological and work-related outcomes?
4. How do these leadership styles compare in terms of their overall impact on employee outcomes?

Variables

Independent Variables: Transformational Leadership, Transactional Leadership, Laissez-faire Leadership.

Dependent Variable: Employee Psychological and Work-Related Outcomes, including job satisfaction, job performance, perceived job security, and related psychological and attitudinal outcomes reported in the literature.

Hypotheses

H1: Transformational leadership has a stronger positive relationship with employee psychological and work-related outcomes than transactional and laissez-faire leadership styles.

H2: Transactional leadership has a positive relationship with employee psychological and work-related outcomes, but this relationship is weaker than that of transformational leadership.

H3: Laissez-faire leadership has the weakest relationship with employee psychological and work-related outcomes and may be non-significant or negative.

Conceptual and Operational Definitions and Measurements (Table 1)

Variable	Conceptual definition	Operational definition	Measurements
Transformational Leadership	Inspire and empower his employee to achieve goal and bring innovation.	Inspire by corporation and collective task accomplishment and ensure their participation and support innovation (by valuing their ideas), empower by training them and improving their self-competence and development.	1. Participation inspired by transformational leadership. (N/O) 2. Task accomplishment of employee due leadership. (N/O) 3. Innovative ideas inspired by leadership. (N/O) 4. Employee self-development empowered by leadership. (O/I)
Transactional Leadership	Focus on the goal and compliance of employee by reward and punishment to	Leadership can inspire determination and empower the employee for the	5. Is the leadership has enough control over work. (O/I)

	achieve goal. Level of empowerment is very low.	innovative behaviors by reward and punishment to increase their performance.	6. Employing motivation due to reward or punishment. (O) 7. Leadership empowerment to employee by employee decision making. (O)
Laissez-faire leadership	This is a delegative leadership style and let the subordinates make the decision to establish goals and solve problem.	They support the subordinates without imposing anything. They bring innovation only when absolutely necessary. They don't empower employees for their growth	8. Leadership influences the employee behavior or task goal. (N/O/I) 9. Is the employee empowerment supported? (O)
Employee Psychological Safety EPS	EPS is factors and how they make the employee feels risk in making the decisions in their job and how employee adapts to the change and learn about it.	Risk in decision making by employee influence the employee's job performance, job security and job satisfaction. Which leadership style ensures the EPS of employees.	10. Job performance due to leadership style? (N/O) 11. Risk in Job security due to leadership style (O) 12. Job satisfaction by leadership styles. (O)

Sampling

Table 2

Artefact	Sampling	Remarks
Sampling Method	Random and snowball	Research papers initially selected for highest citations and then snowballed
Clustering	Asian, Western, African	China, America, Pakistan, India, Ghana, Saudi Arab
Expected Tests	Pearson's r Correlation	Collect sample size and pearson's r correlation coefficient to calculate effect size in the studies.

		Perform a fixed effect or random effects meta-analysis or both for meta analysis depending on all the studies included in the analysis.
Sample size	Saturation	Samples added until incremental value addition diminishes

DATA COLLECTION

Pearson's r correlation for Transformational, Transactional and Laissez-faire Leadership Vs Employee Psychological Safety EPS:

Table 3 show the collected data for the leadership styles vs EPS are sample size and pearson's r correlation coefficient was collected from each study for the analysis. We have included 22 studies in this meta analysis. In these 22 studies, 21 studies have data on transformational leadership, 19 studies have data transactional leadership and 8 studies has data on the lasses-faire leadership. Data was collected based on the Conceptual and operational definitions shown in table 1. Collected data was sample size and Pearson's r correlation coefficient. The correlation was between Leadership styles and EPS.

Meta Analysis

For meta-analysis we work directly with the effect size from each study rather than the p-value. Also we include all of the effects in a single statistical synthesis. This is critically important for the goal of computing (and testing) a summary effect. Meta-analysis also allows us to assess the dispersion of effects, and distinguish between real dispersion and spurious dispersion.

Effect Size Based on Correlations

For studies that report a correlation between two continuous variables, the correlation coefficient itself can serve as the effect size index.

Most meta-analysts do not perform syntheses on the correlation coefficient itself because the variance depends strongly on the correlation. Rather, the correlation is converted to the Fisher's z scale (not to be confused with the z-score used with significance tests), and all analyses are performed using the transformed values as shown in the figure below. The results, such as the summary effect and its confidence interval, would then be converted back to correlations.

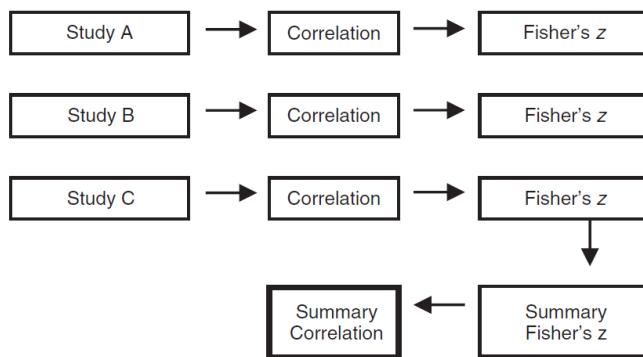


Figure 2: Correlations are analyzed using Fisher's z

Table 3: Data Collection from Studies:

Sample Size N (Sector, region)	Study	Transformational Leadership Vs EPS	Transactional Leadership Vs EPS	Laissez- faaire Leadership Vs EPS
105 (EMM in India & Chinna)	R. Rao-Nicholson et al., (2016) ^[1]	0.71**	0.48*	0.40
332 (Health sector, Pakistan)	Humayun Faiz Rasool et al. (2015) ^[2]	0.681**	0.365**	
545 (School, Tanzania, Netherland)	S. Nguni et al. (2006) ^[3]	0.53*	0.39*	-0.06
447 (Employees Multinational Firm, USA)	L. A. Nemanich & R. T. Keller (2007) ^[4]	0.38**		
330 (Public Sector Enterprises, Ghanaian)	F. Donkor & D. Zhou (2020) ^[5]		0.155**	0.245**
265 (Employee Life insurance company, Beijing, China)	X. S. Lin et al. (2016) ^[6]	0.13*		

224 (Bank, Pakistan)	M. Asrar-ul-Haq et al (2016) ^[7]	0.38**	0.42**	-0.26**
122** (nurses, USA)	T. Malloy & B. Penprase (2010) ^[8]	0.48**	0.45**	-0.53**
1045* (nurses, German)	S. Gregersen et al. (2014) ^[9]	0.52	0.45	
153 (Cellulose Pulp Mill in KwaZulu-Natal, South Africa)	R. Loganathan (2013) ^[10]	0.501*	0.403*	0.230*
233 (Health, Uganda)	C. Musinguzi et al. (2018) ^[11]	0.38*	0.21*	-0.05
94 (Nurses, Hospital Saudi Arab)	F. M. M. Alshahrani & L. A. Baig 2016 ^[12]	0.78**	0.50**	
308 (Nurses, Hospital, Saudi Arab)	R. F. ABUALRUB (2011) ^[13]	0.45**	-0.14	
230 (Bank, Pakistan)	H. A. Javed et al. (2014) ^[14]	0.182	0.933**	
200 (Nurses Hospital, Malaysia)	S. L. Choi et al. (2016) ^[15]	0.406		
115 (SME Organizations in Nigeria)	O. K. Sakiru (2013) ^[16]	0.662**	0.504**	
178 (Chinese restaurant in South Korea)	Y.-K. Lee et al. (2011) ^[17]	0.20**	0.12	
124 (Banks, Islamabad pakistan)	S. Khan et al (2014) ^[18]	0.244**	0.209*	
179 (Employees at	R. Masa'deh et al. (2016) ^[19]	0.245	0.346	

the Higher Council of Youth in Jordan)				
108 (Emergency Medical Technician, 23 Stations in Iran)	A. Ghorbanian (2012) ^[20]	0.443**	0.392**	-0.046
217 (Public Universities, Lahore, Pakistan)	H. Saleem (2015) ^[21]	0.638**	-0.285**	
51 (Instructor, Universities, Somalia)	A. Y. S. Ali (2013) ^[22]	0.574**	0.178	

* Correlation is significant at 0.05 level (2-tailed)

** Correlation is significant at 0.01 level (2-tailed)

Most meta-analyses are based on one of two statistical models, the fixed-effect model or the random-effects model.

Fixed-Effect Meta Analysis

Under the fixed-effect model we assume that there is one true effect size (hence the term **fixed effect**) which underlies all the studies in the analysis, and that all differences in observed effects are due to sampling error. While we follow the practice of calling this a fixed-effect model, a more descriptive term would be a common-effect model. In either case, we use the singular (effect) since there is only one true effect.

Random-Effect Meta Analysis

By contrast, under the random-effects model we allow that the true effect could vary from study to study. For example, the effect size might be higher (or lower) in studies where the participants are older, or more educated, or healthier than in others, or when a more intensive variant of an intervention is used, and so on. Because studies will differ in the mixes of participants and in the implementations of interventions, among other reasons, there may be different effect sizes underlying different studies.

Which Model should be used?

The selection of a computational model should be based on our expectation about whether or not the studies share a common effect size and on our goals in performing the analysis.

There is one caveat and that is if the number of studies is very small, then the estimate of the between-studies variance will have poor precision. While the random-effects model is still the appropriate model, we lack the information needed to apply it correctly.

But in our meta analysis random effect meta analysis is still appropriate model as each study differs in the mixes of participants and in the implementations of interventions, there are different effect sizes underlying different studies.

Analysis

Analysis for Transformational Leadership TF vs Employee Psychological Safety EPS

Calculations (Effect size, variance, std. Err)

We start the analysis by calculating the effect size as Fisher's z transformed values as described in the previous section of Meta Analysis. Table 4 shows the calculations for effect size, variance and Std. Err.

Fixed-Effect Meta Analysis or the Random-Effects Meta Analysis

Table 4: Part A – Calculations (Effect Size, Vz and Std. Err Calculations) for TF vs EPS

Study	Pearson's r Correlation (TF vs EPS)	n	Effect Size (Fisher's z)	Variance Vz	Std. Err
R. Rao-Nicholson et al., (2016)	0.71	105	0.887184	0.009804	0.099015
Humayun Faiz Rasool et al. (2015)	0.681	332	0.830977	0.00304	0.055132
S. Nguni et al. (2006)	0.53	545	0.590145	0.001845	0.042954
L. A. Nemanich & R. T. Keller (2007)	0.38	447	0.40006	0.002252	0.047458
X. S. Lin et al. (2016)	0.13	265	0.13074	0.003817	0.06178
M. Asrar-ul-Haq et al (2016)	0.38	224	0.40006	0.004525	0.067267
T. Malloy & B. Penprase (2010)	0.48	122	0.522984	0.008403	0.09167
S. Gregersen et al. (2014)	0.52	1045	0.57634	0.00096	0.030979
R. Loganathan (2013)	0.501	153	0.55064	0.006667	0.08165
C. Musinguzi et al. (2018)	0.38	233	0.40006	0.004348	0.065938
F. M. M. Alshahrani & L. A. Baig 2016	0.78	94	1.045371	0.010989	0.104828
R. F. ABUALRUB (2011)	0.45	308	0.4847	0.003279	0.05726
H. A. Javed et al. (2014)	0.182	230	0.18405	0.004405	0.066372
S. L. Choi et al. (2016)	0.406	200	0.430812	0.005076	0.071247
O. K. Sakiru (2013)	0.662	115	0.796366	0.008929	0.094491
Y.-K. Lee et al. (2011)	0.2	178	0.202733	0.005714	0.075593
S. Khan et al (2014)	0.244	124	0.249023	0.008264	0.090909
R. Masa'deh et al. (2016)	0.245	179	0.250087	0.005682	0.075378
A. Ghorbanian (2012)	0.443	108	0.475957	0.009524	0.09759
H. Saleem (2015)	0.638	217	0.754794	0.004673	0.068359
A. Y. S. Ali (2013)	0.574	51	0.653468	0.020833	0.144338

Random Effect Meta Analysis for Transformational Leadership vs. Employee Psychological Safety

Table 5 below represents the computations used in Random Effect Meta Analysis for Transformational Leadership vs Employee Psychological Safety.

Table 5: Part C - Random Effect Meta-Analysis for TF vs EPS

Effect Size (Fisher's z)	Variance V	T ² Tau Square	Total Variance V _T = V + T ²	Weight W = 1/ V _T	W*z
0.887184	0.009804	0.0410976	0.050902	19.64577	17.42941
0.830977	0.00304	0.0410976	0.044137	22.65665	18.82715
0.590145	0.001845	0.0410976	0.042943	23.28687	13.74264
0.40006	0.002252	0.0410976	0.04335	23.06811	9.228621
0.13074	0.003817	0.0410976	0.044914	22.26456	2.910866
0.40006	0.004525	0.0410976	0.045623	21.919	8.768908
0.522984	0.008403	0.0410976	0.049501	20.20162	10.56513
0.57634	0.00096	0.0410976	0.042057	23.77707	13.70367
0.55064	0.006667	0.0410976	0.047764	20.93614	11.52828
0.40006	0.004348	0.0410976	0.045445	22.0044	8.803072
1.045371	0.010989	0.0410976	0.052087	19.19878	20.06984
0.4847	0.003279	0.0410976	0.044376	22.53454	10.9225
0.18405	0.004405	0.0410976	0.045503	21.97661	4.044805
0.430812	0.005076	0.0410976	0.046174	21.65732	9.33024
0.796366	0.008929	0.0410976	0.050026	19.98952	15.91897
0.202733	0.005714	0.0410976	0.046812	21.36208	4.330789
0.249023	0.008264	0.0410976	0.049362	20.25846	5.044821
0.250087	0.005682	0.0410976	0.046779	21.37691	5.346077
0.475957	0.009524	0.0410976	0.050621	19.75448	9.402284
0.754794	0.004673	0.0410976	0.045771	21.84812	16.49082
0.653468	0.020833	0.0410976	0.061931	16.14701	10.55156
SUM			445.864	226.9604	

The weighted mean (M) is then computed as:

$$M = \frac{\sum W * z}{\sum W} = 0.509$$

The variance of the summary effect is estimated as the reciprocal of the sum of the weights, or

$$V_M = \frac{1}{\sum W} = 0.000192$$

and the estimated standard error of the summary effect is then the square root of the variance,

$$SE_M = \sqrt{V_M} = 0.00224$$

Then, 95% lower and upper limits for the summary effect are estimated as

$$LL_M = M - 1.96 * SE_M = 0.4162$$

$$UL_M = M + 1.96 * SE_M = 0.6019$$

Finally, a Z-value can be computed using

$$Z = \frac{M}{SE_M} = 36.467$$

Summary for Random Effect Meta Analysis for TF vs. EPS

These parameters are shown in the table below represent the summary for Random Effect Meta Analysis for TF vs EPS.

Table 6: Summary for Random Effect Meta Analysis for TF vs EPS

M =	0.509035
Vm =	0.002243
Sem =	0.047359
LL_M =	0.416212
UL_M =	0.601858
Z =	10.74853
for one tail test	p<0.0001
for two tail tests	p<0.0001

Result Random Effect Meta Analysis for TF vs. EPS

We can convert the effect size and confidence limits from the Fisher's z metric to correlations using

$$Correlation r = \frac{e^{2*M} - 1}{e^{2*M} + 1} = \frac{e^{2*0.509} - 1}{e^{2*0.509} + 1} = 0.469$$

$$LLr = \frac{e^{2*LLM} - 1}{e^{2*LLM} + 1} = \frac{e^{2*0.4162} - 1}{e^{2*0.4162} + 1} = 0.394$$

$$ULr = \frac{e^{2*ULM} - 1}{e^{2*ULM} + 1} = \frac{e^{2*0.6019} - 1}{e^{2*0.6019} + 1} = 0.538$$

These values are given in the following table show the results for the Random Effect Meta Analysis for TF vs EPS

Table 7: Results for the Random Effect Meta Analysis for TF vs EPS

r =	0.469193
LLr =	0.393735
Ul_r =	0.53837

In words, using random-effects weights, the summary estimate of the correlation is positively correlated between TF and EPS at $r = 0.469$ with a 95% confidence interval of 0.394 to 0.538. The Z-value is 10.749, and the p-value is <0.0001 (one-tailed) or <0.0001 (two tailed).

Analysis for Transactional Leadership TS vs Employee Psychological Safety EPS**Calculations (Effect size, Var, Std. Err)**

We start the analysis by calculating the effect size as Fisher's z transformed values as described in the previous section for TF vs EPS in meta-analysis.

Table 8: Part A – Calculations (Effect Size, Vz and Std. Err Calculations) for TS vs EPS

Study	Pearson's r Correlation TS vs EPS	n	Effect Size (Fisher's z)	Variance Vz	Std. Err
R. Rao-Nicholson et al., (2016)	0.48	105	0.522984	0.009804	0.099015
Humayun Faiz Rasool et al. (2015)	0.365	332	0.382642	0.00304	0.055132
S. Nguni et al. (2006)	0.39	545	0.4118	0.001845	0.042954
F. Donkor & D. Zhou (2020)	0.155	330	0.156259	0.003058	0.0553
M. Asrar-ul-Haq et al (2016)	0.42	224	0.447692	0.004525	0.067267
T. Malloy & B. Penprase (2010)	0.45	122	0.4847	0.008403	0.09167
S. Gregersen et al. (2014)	0.45	1045	0.4847	0.00096	0.030979
R. Loganathan (2013)	0.403	153	0.427225	0.006667	0.08165
C. Musinguzi et al. (2018)	0.21	233	0.213171	0.004348	0.065938
F. M. M. Alshahrani & L. A. Baig 2016	0.5	94	0.549306	0.010989	0.104828
R. F. ABUALRUB (2011)	-0.14	308	-0.14093	0.003279	0.05726
H. A. Javed et al. (2014)	0.933	230	1.681068	0.004405	0.066372
O. K. Sakiru (2013)	0.504	115	0.554654	0.008929	0.094491
Y.-K. Lee et al. (2011)	0.12	178	0.120581	0.005714	0.075593
S. Khan et al (2014)	0.209	124	0.212125	0.008264	0.090909
R. Masa'deh et al. (2016)	0.346	179	0.360893	0.005682	0.075378
A. Ghorbanian (2012)	0.392	108	0.414161	0.009524	0.09759
H. Saleem (2015)	-0.285	217	-0.29312	0.004673	0.068359
A. Y. S. Ali (2013)	0.178	51	0.179916	0.020833	0.144338

Random Effect Meta Analysis for Transactional Leadership TS vs Employee Psychological Safety EPS

The table below represents the computations used in Random Effect Meta Analysis for Transactional Leadership TS vs Employee Psychological Safety EPS.

Table 9: Part C - Random Effect Meta-Analysis for TS vs EPS

Effect Size	Variance	T ² Tau Saquare	Total Variance	Weight W	W*z
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(Fisher's z)					
0.522984	0.009804	0.1446289	0.154433	6.475308	3.386484
0.382642	0.00304	0.1446289	0.147668	6.77193	2.591227
0.4118	0.001845	0.1446289	0.146474	6.827155	2.811423
0.156259	0.003058	0.1446289	0.147687	6.771077	1.058045
0.447692	0.004525	0.1446289	0.149154	6.70449	3.001547
0.4847	0.008403	0.1446289	0.153032	6.53457	3.167308
0.4847	0.00096	0.1446289	0.145589	6.868671	3.329247
0.427225	0.006667	0.1446289	0.151296	6.60958	2.823781
0.213171	0.004348	0.1446289	0.148977	6.712458	1.430904
0.549306	0.010989	0.1446289	0.155618	6.425996	3.529839
-0.14093	0.003279	0.1446289	0.147908	6.760979	-0.95279
1.681068	0.004405	0.1446289	0.149034	6.70987	11.27975
0.554654	0.008929	0.1446289	0.153557	6.51222	3.612028
0.120581	0.005714	0.1446289	0.150343	6.651449	0.802039
0.212125	0.008264	0.1446289	0.152893	6.540507	1.387408
0.360893	0.005682	0.1446289	0.150311	6.652886	2.400977
0.414161	0.009524	0.1446289	0.154153	6.487074	2.686693
-0.29312	0.004673	0.1446289	0.149302	6.697844	-1.96324
0.179916	0.020833	0.1446289	0.165462	6.043676	1.087357
SUM				125.7577	47.47002

Summary for Random Effect Meta Analysis for TS vs EPS

The Summary for these parameter is calculated similarly as in TF vs EPS, table below represent the summary for Random Effect Meta Analysis for TS vs EPS.

Table 10: Summary for Fixed Effect Meta Analysis for TS vs EPS

M	0.377472
V_m	0.007952
S_{em}	0.089173
L_{L_M}	0.202693
U_{L_M}	0.552251
Z	4.233036

for one tail test p<0.0001
for two tail test p<0.0001

Result Random Effect Meta Analysis for TS vs EPS

We can convert the effect size and confidence limits from the Fisher's z metric to correlations r as described for TF vs EPS in section 1.2.2.

The results are given in the following table show the results for the Random Effect Meta Analysis for TS vs EPS

Table 11: Results for the Fixed Effect Meta Analysis for TS vs EPS

r	0.36051
LLr	0.199962
Ul	0.502205

In words, using random-effect weights, the summary estimate of the correlation between transactional leadership and EPS is 0.361 with a 95% confidence interval of 0.199 to 0.502. The Z-value is 4.233, and the p-value is <0.0001 (one-tailed) or <0.0001 (two tailed).

Analysis for Laissez-faire Leadership LL vs Employee Psychological Safety EPS

Calculations (Effect size, variance, std. Err)

We start the analysis by calculating the effect size as Fisher's z transformed values as described in the first section for the analysis in TF vs EPS meta analysis. Calculations are shown in Table 12.

Table 12: Part A – Calculations (Effect Size, Vz and Std. Err Calculations) for LF vs EPS

Study	Pearson's r Correlation TS vs EPS	n	Effect Size (Fisher's z)	Variance Vz	Std. Err
R. Rao-Nicholson et al., (2016)	0.4	105	0.423649	0.009804	0.099015
S. Nguni et al. (2006)	-0.06	545	-0.06007	0.001845	0.042954
F. Donkor & D. Zhou (2020)	0.245	330	0.250087	0.003058	0.0553
M. Asrar-ul-Haq et al (2016)	-0.26	224	-0.26611	0.004525	0.067267
T. Malloy & B. Penprase (2010)	-0.53	122	-0.59015	0.008403	0.09167
R. Loganathan (2013)	0.23	153	0.234189	0.006667	0.08165
C. Musinguzi et al. (2018)	-0.05	233	-0.05004	0.004348	0.065938
A. Ghorbanian (2012)	-0.046	108	-0.04603	0.009524	0.09759

Random Effect Meta Analysis for Laissez-faire Leadership LL vs Employee Psychological Safety EPS

Table 13 below represents the computations used in Random Effect Meta Analysis for Laissez-faire Leadership LL vs Employee Psychological Safety EPS.

Table 13: Part C - Random Effect Meta-Analysis for LL vs EPS

Effect Size (Fisher's z)	Variance Vz	T ² Tau Saquare	Total Variance	Weight W	W*z
0.423649	0.009804	0.0583978	0.068202	14.66238	6.211701
-0.06007	0.001845	0.0583978	0.060243	16.59948	-0.99717
0.250087	0.003058	0.0583978	0.061456	16.27182	4.069363
-0.26611	0.004525	0.0583978	0.062923	15.89251	-4.22913
-0.59015	0.008403	0.0583978	0.066801	14.96979	-8.83435
0.234189	0.006667	0.0583978	0.065065	15.36936	3.599343
-0.05004	0.004348	0.0583978	0.062746	15.93736	-0.79753
-0.04603	0.009524	0.0583978	0.067922	14.72285	-0.67773
SUM				124.4255	-1.6555

Summary for Random Effect Meta Analysis for LL vs EPS

The Summary for these parameters is calculated similarly as in TF vs EPS in section 1.2.1, table below represent the summary for Random Effect Meta Analysis for LL vs EPS.

Table 14: Summary for Fixed Effect Meta Analysis for LL vs EPS

M	-0.01331
Vm	0.008037
Sem	0.089649
LL_M	-0.18902
UL_M	0.162407
Z	-0.14841
for one tail test	p<0.0001
for two tail test	p<0.0001

Result for Random Effect Meta Analysis for LL vs EPS

We can convert the effect size and confidence limits from the Fisher's z metric to correlations as described for TF vs EPS in section 1.2.2.

The results are given in the following table show the results for the Random Effect Meta Analysis for LL vs EPS

Table 15: Results for the Random Effect Meta Analysis for LL vs EPS

r	-0.0133
LLr	-0.1868
Ul_r	0.160994

Using random-effect weights, the summary estimate of the correlation between laissez-faire and EPS is -0.013 which is not very significant with a 95% confidence interval of -0.187 to 0.161. The Z-value is -0.148, and the p-value is <0.0001 (one-tailed) or <0.0001 (two tailed).

Summary for Random Effect Meta Analysis

Following table 16 shows the Summary of all the Random Effect Meta Analysis for each leadership styles.

Table 16: Summary for Random Effect Meta Analysis

Leadership Styles	Mean M	Variance V _M	Std. SE _M	Err	Lower limit LL _M	Upper Limit UL _M	Z value
Transformational Leadership	0.509035	0.002243	0.047359	0.416212	0.601858	10.74853	
Transactional Leadership	0.377472	0.007952	0.089173	0.202693	0.552251	4.233036	
Laissez-faire Leadership	-0.01331	0.008037	0.089649	-0.18902	0.162407	-0.14841	

for one tail test p<0.0001

for two tail test p<0.0001

Results for Random Effect Meta Analysis:

Results for Random Effect Meta Analysis are shown in the form of Correlations for each leadership styles in the following table. Table 17 show that there is statistically significant positive correlation between transformational leadership and employee psychological safety with $r = 0.4692$ with a 95% confidence interval of 0.3937 to 0.5384. the Z value shown in table 16 is 10.75 and the p-value is < 0.0001 . It can also be seen that for transactional leadership there is statistically significant positive correlation between transformational leadership and employee psychological safety with $r = 0.3605$ but it is less than transformational leadership. There is negative correlation between the lasses-fair leadership and employee psychological safety at $r = -0.0133$, this is not statistically significant value.

Table 17: Results for Random Effect Meta Analysis

Leadership Styles	Correlation r	LLr	ULr
Transformational Leadership vs Employee Psychological Safety	0.4692	0.3937	0.5384
Transactional Leadership vs Employee Psychological Safety	0.3605	0.1999	0.5022
Laissez-faire Leadership vs Employee Psychological Safety	-0.0133	-0.1868	0.0169

Discussion

An extensive meta-analysis approach has been utilized for the relationship between the leadership styles and employee psychological safety. Data was collected from each study while considering the conceptual and operational definition of the variables. There were 22 studies were included in our analysis, from which 21 studies were for transformational leadership, 19 were for transactional leadership and 8 for laissez-faire leadership. Results from this study indicated that the employees from different regions prefer the transformational leadership style compare to transactional and laissez-faire leadership styles as transformational leadership is more positively correlated to EPS than transactional and laissez-fair leadership so it is recommended that organization should adopt the transformational organization to provide better EPS that includes the job performance, job security and job satisfaction to employees.

Conclusion

We can conclude from the results that the correlation with EPS of $r = 0.4692$ for transformational leadership is more than that of $r = 0.3605$ for transactional leadership and $r = -0.0133$ for laissez-faire leadership. This proves our hypothesis 1 that the transformational leadership can increase the employee's psychological safety than the transactional and laissez-faire leadership styles. This also rejects our hypothesis 2 that the Transactional Leadership style can increase the employee's psychological safety than the transformational and laissez-faire leadership styles. Our hypothesis 3 is also corrected that the Laissez-faire Leadership style can have least influence on the employee's psychological safety than the transformational and transactional leadership styles.

The organizations that adopt the transformational leadership style have the ability to empower their employees to achieve goals and improve their competence, while transactional leadership inspire by the reward and punishment to achieve goals and increase the employee's performance. It is concluded that the organization should adopt the transformational leadership to improve the EPS of employees.

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