

**The Moderating Role of Employee Socioeconomic Status in the Relationship between
Leadership and Wellbeing: A Meta-analysis and Representative Survey**

Supplementary Materials

Literature search string

PsycINFO

Ovid

#1 leadership

(**leadership OR leader OR supervisor OR manager OR boss**).mp

#2 Well-being

(**well-being OR happiness OR life satisfaction OR positive affect OR mood OR burnout OR emotional exhaustion OR work engagement OR employee engagement OR stress OR strain OR symptoms OR anxiety OR depression OR ill-being OR health OR negative affect**).mp.

Business Source Premier

EBSCO

#1 leadership

TI("leadership" OR "leader" OR "supervisor" OR "manager" OR "boss") OR
AB("leadership" OR "leader" OR "supervisor" OR "manager" OR "boss") OR
KW("leadership" OR "leader" OR "supervisor" OR "manager" OR "boss")

#2 Well-being

TI("well-being" OR "happiness" OR "life satisfaction" OR "positive affect" OR "mood" OR "burnout" OR "emotional exhaustion" OR "work engagement" OR "employee engagement" OR "stress" OR "strain" OR "symptoms" OR "anxiety" OR "depression" OR "ill-being" OR "health" OR "negative affect") OR AB("well-being" OR "happiness" OR "life satisfaction" OR "positive affect" OR "mood" OR "burnout" OR "emotional exhaustion" OR "work engagement" OR "employee engagement" OR "stress" OR "strain" OR "symptoms" OR "anxiety" OR "depression" OR "ill-being" OR "health" OR "negative affect") OR KW("well-being" OR "happiness" OR "life satisfaction" OR "positive affect" OR "mood" OR "burnout" OR "emotional exhaustion" OR "work engagement" OR "employee engagement" OR "stress" OR "strain" OR "symptoms" OR "anxiety" OR "depression" OR "ill-being" OR "health" OR "negative affect")

Table 1*Summary of Leadership and Wellbeing Categories (Study 1)*

Construct	Variables Included
Leadership	
Change-Oriented Leadership	Transformational leadership Charismatic leadership Visionary leadership Developing Inspirational leadership
Task-Oriented Leadership	Transformational leadership Management by exception, active Initiating structure Directive leadership
Relational-Oriented Leadership	Leader consideration Supportive Leadership Participatory leadership Leader-Member-Exchange Democratic leadership
Ethics-Oriented Leadership	Servant Leadership Ethical Leadership Authentic Leadership
Active Destructive Leadership	Abusive supervision Petty tyranny Destructive leadership Paternalistic leadership Autocratic leadership
Passive Destructive Leadership	Passive leadership Laissez-faire leadership Management by exception, passive Passive-avoidant leadership
Wellbeing	
Positive Wellbeing	Wellbeing Job wellbeing Job satisfaction Work engagement Positive affect Global health
Negative Wellbeing	Psychological distress Anxiety Depression Burnout

Construct	Variables Included
	Exhaustion Depersonalization Cynicism Psychosomatic complaints Job stress Stress
Short-term Wellbeing	Momentary affect/ Positive affect Negative affect Stress Job stress Psychosomatic complains
Long-term Wellbeing	Work engagement Burnout Anxiety Depression Psychological strain Psychosomatic symptoms
Job-specific Wellbeing	Job satisfaction Work engagement Work stress Affect at work Burnout Exhaustion Depersonalization Cynicism Reduced personal accomplishment
General Wellbeing	Wellbeing Anxiety Depression General stress Positive affect Negative affect Global health Psychosomatic complaints
Physical Wellbeing	Global health Physical health Subjective health Psychosomatic symptoms Neck/Shoulder/Arm Pain Head pain Insomnia Stomachache Alcohol/Drugs/Smoking abuse

Construct	Variables Included
Psychological Wellbeing	Psychological wellbeing/ Affective wellbeing Work wellbeing Positive affect Negative affect Irritability/ Irritation/ Frustration Anger Psychological Strain Psychological Distress Stress/ Work stress Social dysfunction Anxiety Depression Psychological symptoms Depersonalization Emotional exhaustion Cynicism Burnout

Table 2*Methodological Moderators (Study 1)*

Study	<i>K</i>	<i>N</i>	\bar{r}	<i>SD_r</i>	<i>SD_{res}</i>	$\bar{\rho}$	<i>SD_{r_c}</i>	<i>SD_{\rho}</i>	95% CI	80% CR
Constructive Leadership										
Design										
Cross-sectional	188	100,815	.37	.21	.21	.43	.23	.23	[.39, .46]	[.13, .72]
Longitudinal	33	11,162	.29	.17	.16	.33	.19	.18	[.26, .39]	[.09, .56]
Type										
Journal	201	109,224	.36	.21	.20	.41	.23	.22	[.38, .45]	[.13, .70]
Dissertation	28	7,312	.37	.22	.21	.42	.25	.24	[.33, .52]	[.11, .73]
Change-Oriented Leadership										
Design										
Cross-sectional	98	50,453	.43	.25	.24	.49	.26	.26	[.43, .54]	[.15, .82]
Longitudinal	15	4,458	.25	.13	.12	.28	.15	.13	[.20, .36]	[.10, .46]
Type										
Journal	93	50,445	.42	.25	.24	.47	.26	.26	[.42, .53]	[.14, .81]
Relational-Oriented Leadership										
Design										
Cross-sectional	67	43,314	.30	.12	.12	.35	.14	.14	[.31, .38]	[.17, .53]
Longitudinal	11	2,444	.43	.16	.15	.48	.18	.17	[.36, .60]	[.25, .71]
Type										
Journal	72	44,577	.30	.13	.12	.35	.15	.14	[.32, .39]	[.17, .54]
Dissertation	5	1,143	.40	.14	.13	.44	.16	.15	[.24, .63]	[.21, .66]
Task-Oriented Leadership										
Design										
Cross-sectional	40	11,881	.19	.18	.17	.22	.22	.21	[.15, .29]	[-.05, .49]
Longitudinal	2	311	.08	.02	.00	.10	.02	.00	[-.05, .25]	[.10, .10]
Type										
Journal	35	10,855	.20	.16	.15	.25	.19	.18	[.18, .31]	[.01, .48]
Ethics-Oriented Leadership										
Design										
Cross-sectional	35	11,659	.39	.17	.17	.43	.20	.19	[.37, .50]	[.19, .68]
Longitudinal	5	1,364	.18	.17	.16	.22	.20	.18	[-.02, .47]	[-.06, .51]
Type										
Journal	43	14,972	.33	.17	.17	.38	.20	.19	[.32, .44]	[.13, .63]
Dissertation	5	1,989	.50	.14	.14	.58	.17	.16	[.37, .79]	[.33, .83]
Destructive Leadership										

Study	<i>K</i>	<i>N</i>	\bar{r}	<i>SD_r</i>	<i>SD_{res}</i>	$\bar{\rho}$	<i>SD_{r_c}</i>	<i>SD_ρ</i>	95% CI	80% CR
Design										
Cross-sectional	47	18,546	-.16	.25	.25	-.19	.30	.29	[-.28, -.11]	[-.58, .19]
Longitudinal	12	3,590	-.29	.13	.12	-.33	.13	.12	[-.42, -.25]	[-.50, -.17]
Type										
Journal	55	21,804	-.18	.24	.24	-.22	.28	.27	[-.29, -.14]	[-.57, .14]
Dissertation	4	332	-.24	.34	.32	-.29	.40	.38	[-.94, .35]	[-.92, .34]
Active Destructive										
Design										
Cross-sectional	16	5,318	-.18	.18	.17	-.21	.21	.20	[-.33, -.10]	[-.48, .06]
Longitudinal	4	1,085	-.39	.12	.10	-.43	.13	.11	[-.63, -.23]	[-.61, -.24]
Type										
Journal	18	6,166	-.22	.18	.17	-.26	.21	.20	[-.36, -.15]	[-.52, .01]
Dissertation	2	237	-.14	.40	.39	-.18	.47	.46	[-.40, .05]	[-.58, .23]

Note. *k* = number of studies contributing to meta-analysis; *N* = total sample size; \bar{r} = mean observed correlation; *SD_r* = observed standard deviation of *r*; *SD_{res}* = residual standard deviation of *r*; $\bar{\rho}$ = mean true-score correlation; *SD_{r_c}* = observed standard deviation of corrected correlations (*r_c*); *SD_ρ* = residual standard deviation of ρ ; CI = confidence interval around $\bar{\rho}$; CR = credibility interval around $\bar{\rho}$.

Correlations corrected individually. For Task-Oriented Leadership studies are journal publications. For Passive Destructive leadership studies are cross-sectional and journal publications.

Figure 1

Cummulative Meta-Analysis Constructive Leadership and Overall Wellbeing



Figure 2

Cummulative Meta-Analysis Destructive Leadership and Overall Wellbeing

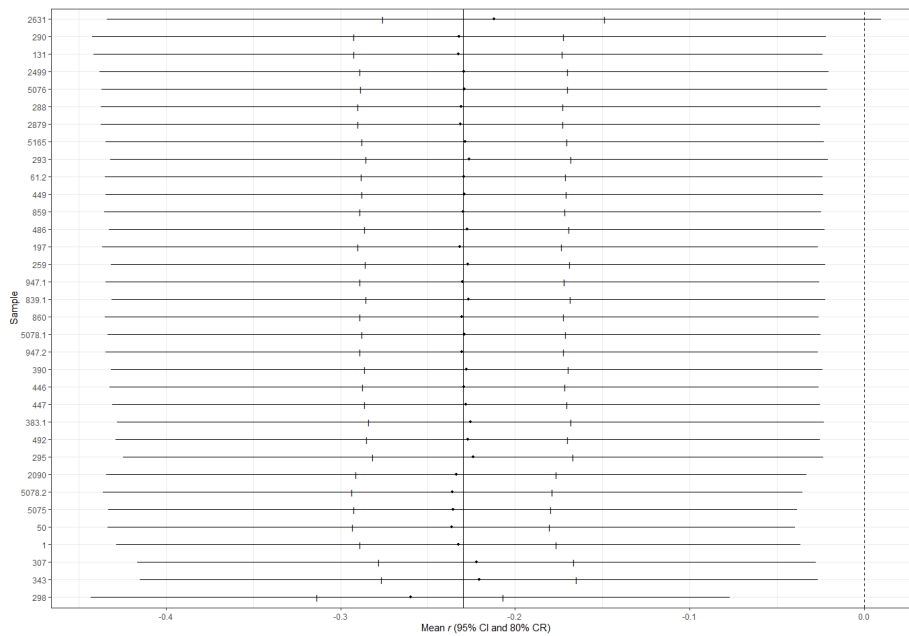


Figure 3

Funnel Plot for Constructive Leadership and Overall Wellbeing

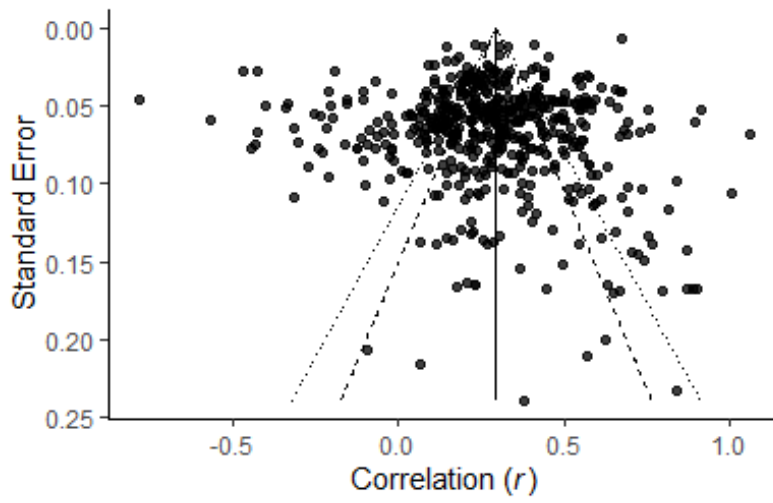


Figure 4

Funnel Plot for Destructive Leadership and Overall Wellbeing

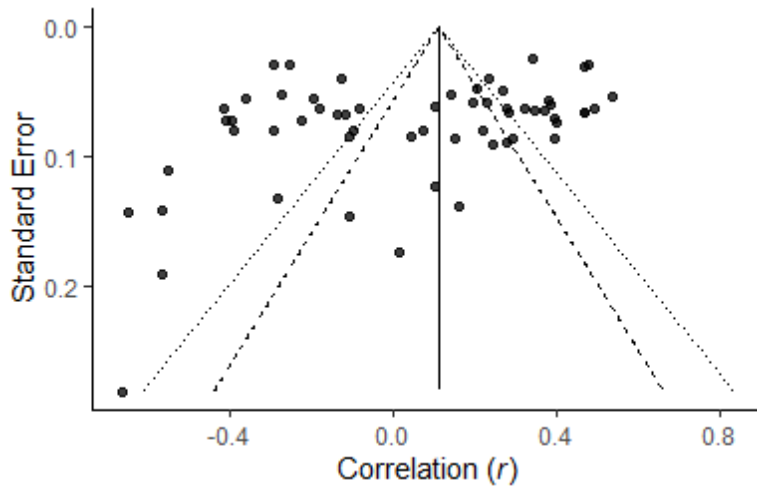


Table 3*Bootstrapped Estimates of Effect Sizes for Constructive Leadership and Overall Wellbeing**(Study 1)*

	Bootstrapped		95% Confidence Interval	
	Mean	Variance	95% Confidence Interval	
			<i>Lower Level</i>	<i>Upper Level</i>
<i>k</i>	227	.00	227	227
N	11600	47200000	8600	17900
\bar{r}	.36	.00	.29	.49
SD_r	.20	.00	.16	.25
SD_{res}	.01	.00	.01	.02
SD_{r_c}	.04	.00	.03	.05
SD_ρ	.19	.00	.15	.24
95% CILL	.33	.00	.27	.47
95% CIUL	.38	.00	.32	.52
80% CRLl	.11	.00	.05	.16
80% CRUL	.60	.01	.50	.78

Note. *k* = number of studies contributing to meta-analysis; *N* = total sample size; \bar{r} = mean observed correlation; SD_r = observed standard deviation of *r*; SD_{res} = residual standard deviation of *r*; SD_{r_c} = observed standard deviation of corrected correlations (r_c); SD_ρ = residual standard deviation of ρ ; CI = confidence interval around \bar{r} ; ; CR = credibility interval around $\bar{\rho}$. Correlations corrected individually.

Table 4*Bootstrapped Estimates of Effect Sizes for Destructive Leadership and Overall Wellbeing**(Study 1)*

	Bootstrapped		95% Confidence Interval	
	Mean	Variance	Lower Level	
			Lower Level	Lower Level
<i>k</i>	34	.00	34	34
<i>N</i>	1120	551000	782	1880
\bar{r}	-.23	.00	-.28	-.14
SD_r	.16	.00	.12	.21
SD_{res}	.03	.00	.02	.04
SD_{r_c}	.05	.00	.04	.06
SD_ρ	.15	.00	.11	.20
95% CILL	.29	.00	-.34	-.21
95% CIUL	.17	.00	-.24	-.08
80% CRLl	.43	.00	-.53	-.37
80% CRUL	-.03	.00	-.13	.08

Note. *k* = number of studies contributing to meta-analysis; *N* = total sample size; \bar{r} = mean

observed correlation; SD_r = observed standard deviation of *r*; SD_{res} = residual standard

deviation of *r*; SD_{r_c} = observed standard deviation of corrected correlations (r_c); SD_ρ =

residual standard deviation of ρ ; CI = confidence interval around \bar{r} ; ; CR = credibility interval

around $\bar{\rho}$. Correlations corrected individually.

Table 5

Descriptive Statistics and Correlations for Study Variables

		M	SD	N	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	
1.	Gender ^a	1.50	0.50	62602																			
2.	Age	42.70	14.35	62602	-.084**																		
3.	Working Hours	29.00	11.91	61378	-.346**	.200**																	
4.	Company size	5.39	2.37	62389	-.066**	.097**	.142**																
5.	Constructive Leadership	3.02	0.70	60348	.012**	-.073**	-.032**	-.025**															
6.	Destructive Leadership	1.16	0.42	62332	-.041**	.039**	.056**	.022**	-.335**														
7.	Autonomy	2.33	0.50	62216	-.182**	.147**	.207**	.095**	.197**	-.080**													
8.	Work Pressure	2.38	0.67	62358	.054**	0.001	.127**	.050**	-.180**	.144**	-.118**												
9.	Cognitive Demands	3.00	0.69	62530	-.046**	.215**	.282**	.136**	-.009*	.066**	.082**	.384**											
10.	Burnout	2.22	1.30	62549	.043**	-0.006	.090**	.062**	-.283**	.245**	-.186**	.394**	.246**										
11.	Education	2.24	0.73	61922	.060**	.046**	.181**	.166**	.076**	-.011**	.179**	.131**	.303**	.104**									
12.	Occupation Status	2.83	1.01	62212	.010**	.127**	.242**	.158**	.091**	-.008*	.210**	.128**	.396**	.111**	.620**								
13.	Contract type ^b	0.78	0.41	61854	-.025**	.357**	.286**	.139**	-.041**	.038**	.141**	.098**	.226**	.063**	.170**	.222**							
14.	Salary	1.86	0.63	62339	-.069**	0.001	.049**	.077**	.231**	-.081**	.225**	-.127**	.012**	-.174**	.069**	.108**	0.007						
15.	Education Dummy 1	0.41	0.49	61922	-.038**	0.007	-.018**	-.050**	-.052**	.013**	-.045**	-.050**	-.081**	-.054**	-.267**	-.314**	-.027**	-.049**					
16.	Education Dummy 2	0.42	0.49	61922	.063**	.031**	.142**	.148**	.082**	-.014**	.156**	.123**	.265**	.104**	.877**	.617**	.139**	.076**	-.697**				
17.	Occupation Status Dummy 1	0.39	0.49	62212	-.013**	-.036**	-.099**	-.139**	-.072**	.011**	-.157**	-.102**	-.196**	-.076**	-.429**	-.655**	-.117**	-.090**	.290**	-.463**			
18.	Occupation Status Dummy 2	0.17	0.37	62212	.022**	.033**	.056**	.055**	-0.003	0.004	.080**	0.002	.071**	-0.004	.030**	.076**	.071**	.021**	.107**	-.031**	-.360**		
19.	Occupation Status Dummy 3	0.37	0.48	62212	0.000	.084**	.174**	.129**	.089**	-.011**	.159**	.123**	.307**	.105**	.561**	.881**	.158**	.095**	-.372**	.602**	-.608**	-.344**	

Note. N= 60348-62602^a Gender was coded as 0 = Male; 1 = Female. ^b Contract type was coded as 0 = Flexible; 1 = Permanent. Education was coded 1=low 2= medium 3=high; Occupation status was coded level 1=1; level 2=2; level 3= 3; level 4 = 4.

Study 2. Moderation Plots

Figure 5

Constructive Leadership and Burnout moderated by Education

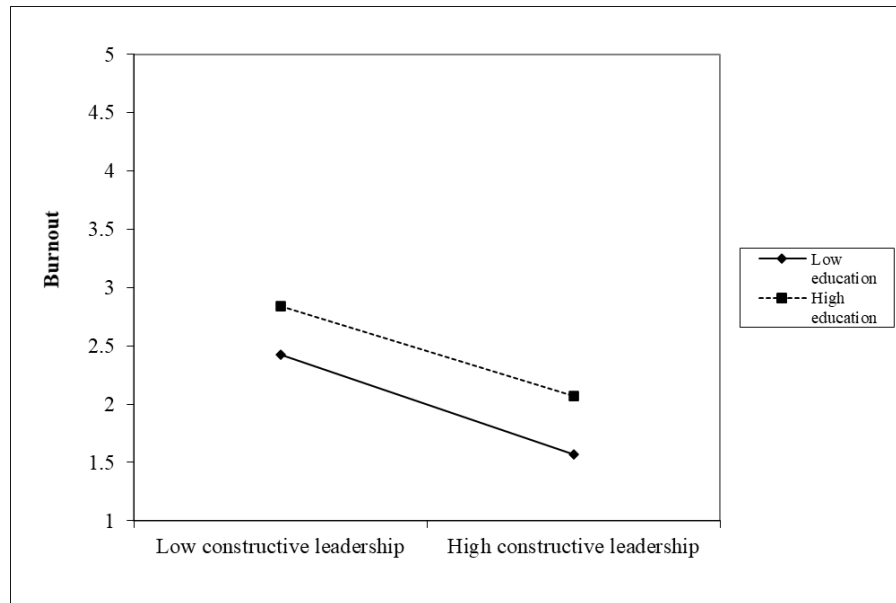


Figure 6

Constructive Leadership and Burnout moderated by Contract

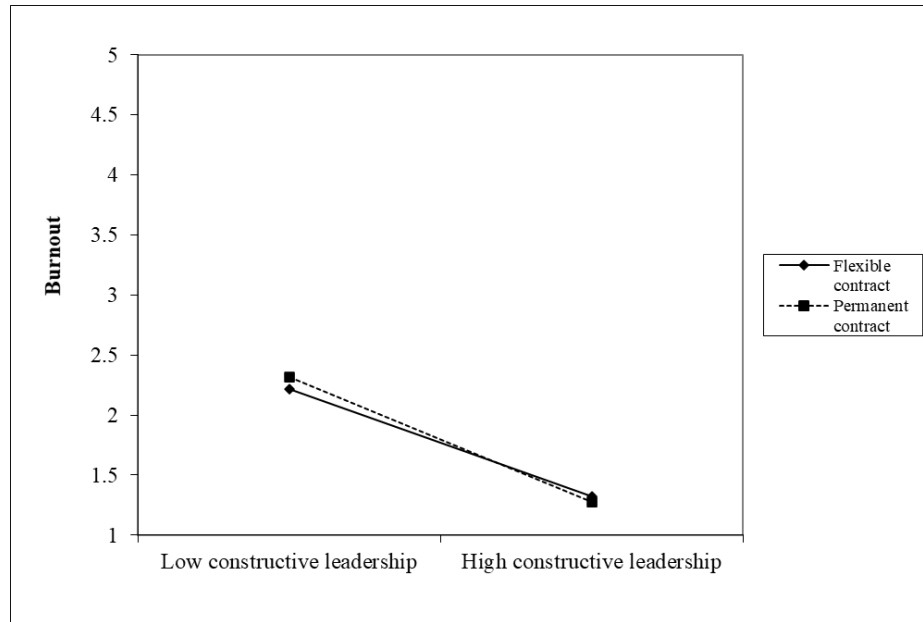


Figure 7

Constructive Leadership and Burnout moderated by Income

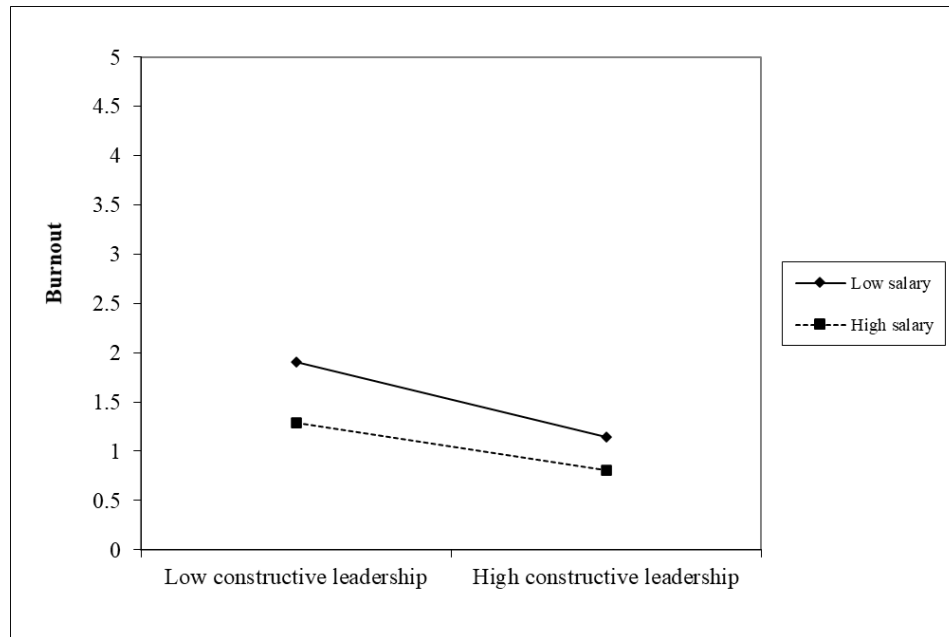


Figure 8

Destructive Leadership and Burnout moderated by Occupational Status

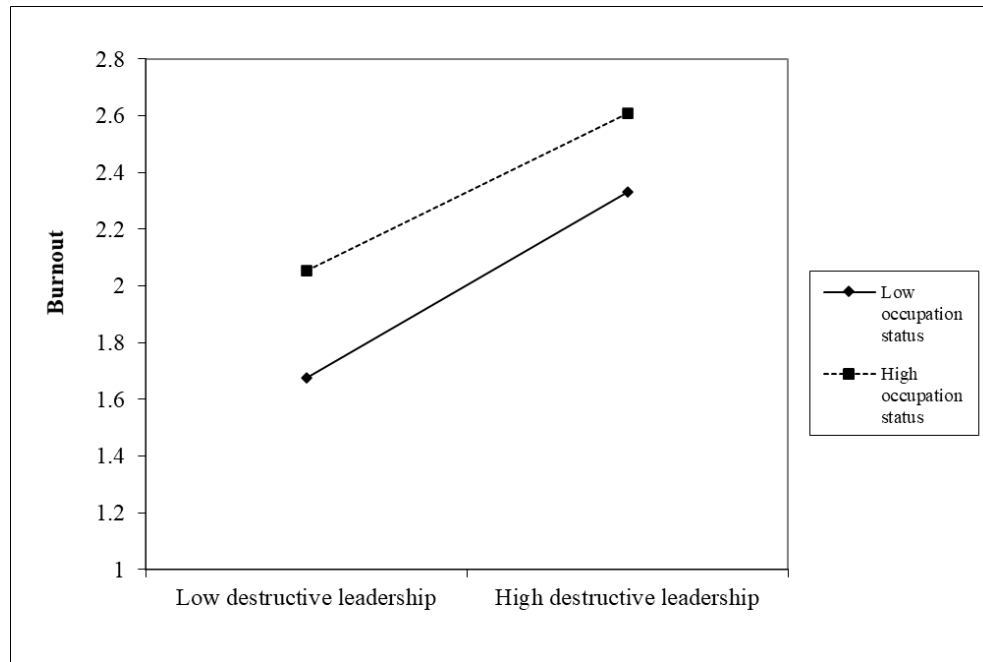


Figure 9

Destructive Leadership and Burnout moderated by Contract

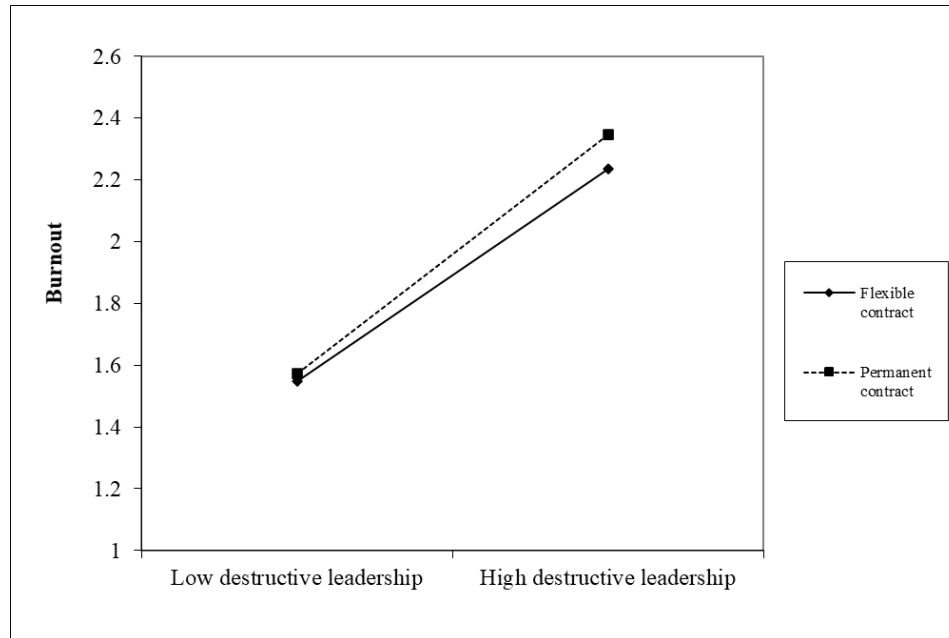


Figure 10

Destructive Leadership and Burnout moderated by Income

