



**A test of longitudinal mediation effects of a tripartite work design model
of learning demands, work-related resources, and job stressors
on work engagement and psychosomatic complaints
– the role of intrinsic motivation and burnout**

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Aim

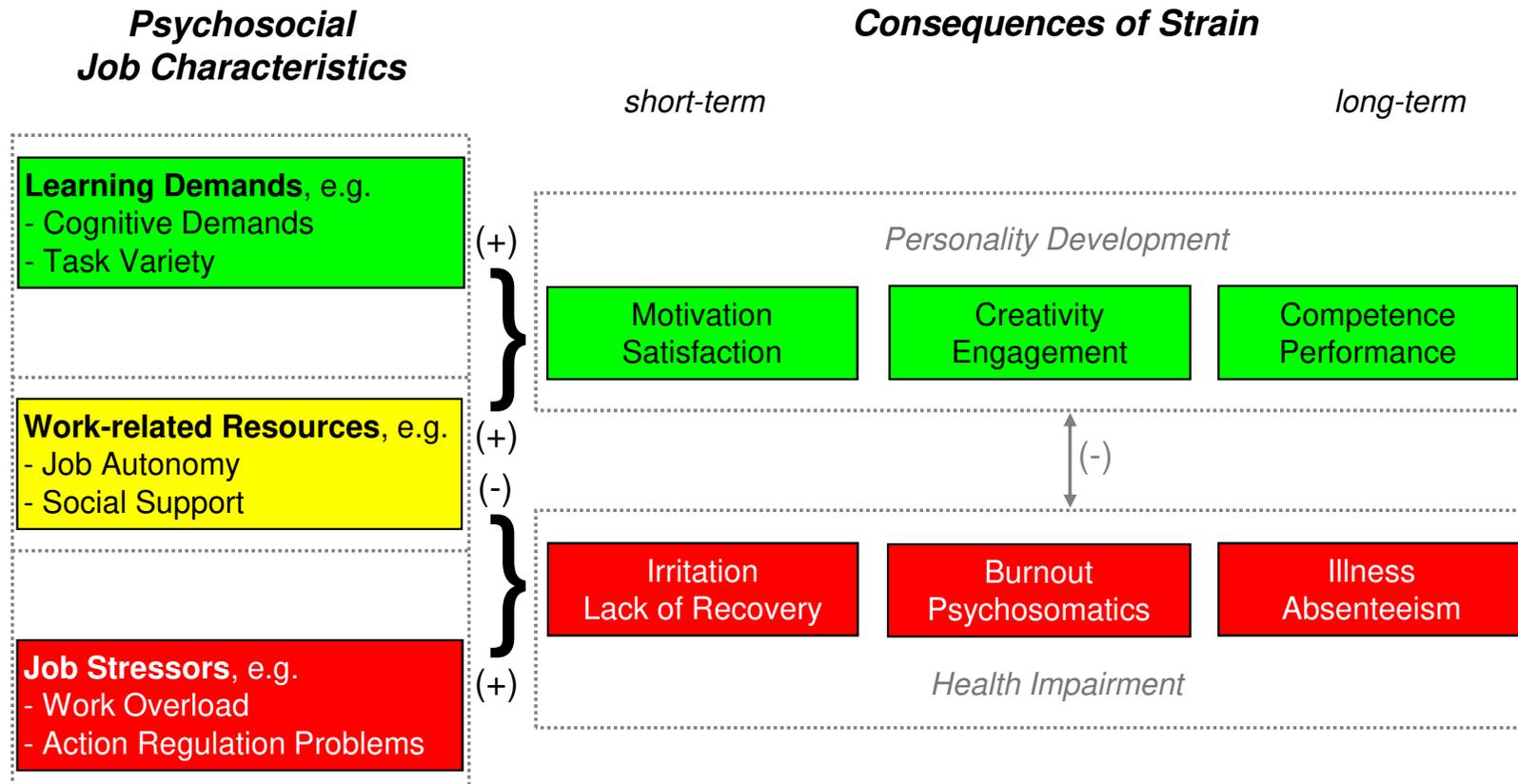
Stepwise validation of a tripartite work design model

incl. (longitudinal) mediation processes of

- *intrinsic work motivation*:
learning demands & work-related resources → work engagement
- *core (symptoms of) burnout*:
job stressors & work-related resources → secondary burnout symptoms

Measurement of core & secondary burnout symptoms by German BAT

Theoretical background: work design model



(Büssing, 1992; Glaser, 1997; Büssing & Glaser, 2002; Glaser & Herbig, 2012)

Theoretical background: work design model

- Rooted in action-regulation theory (e.g., Hacker, 2003)
- Normative work design, beyond subjective appraisals
- Contrast to Job Demands Resources [JDR] model (e.g., Demerouti et al., 2001)
→ transactional stress theory (Lazarus & Folkman, 1984)
- *Necessary* learnings demands for personality development at work
- *Supportive* work-related resources to manage work tasks/conditions
- *Detrimental* job stressors responsible for health impairment

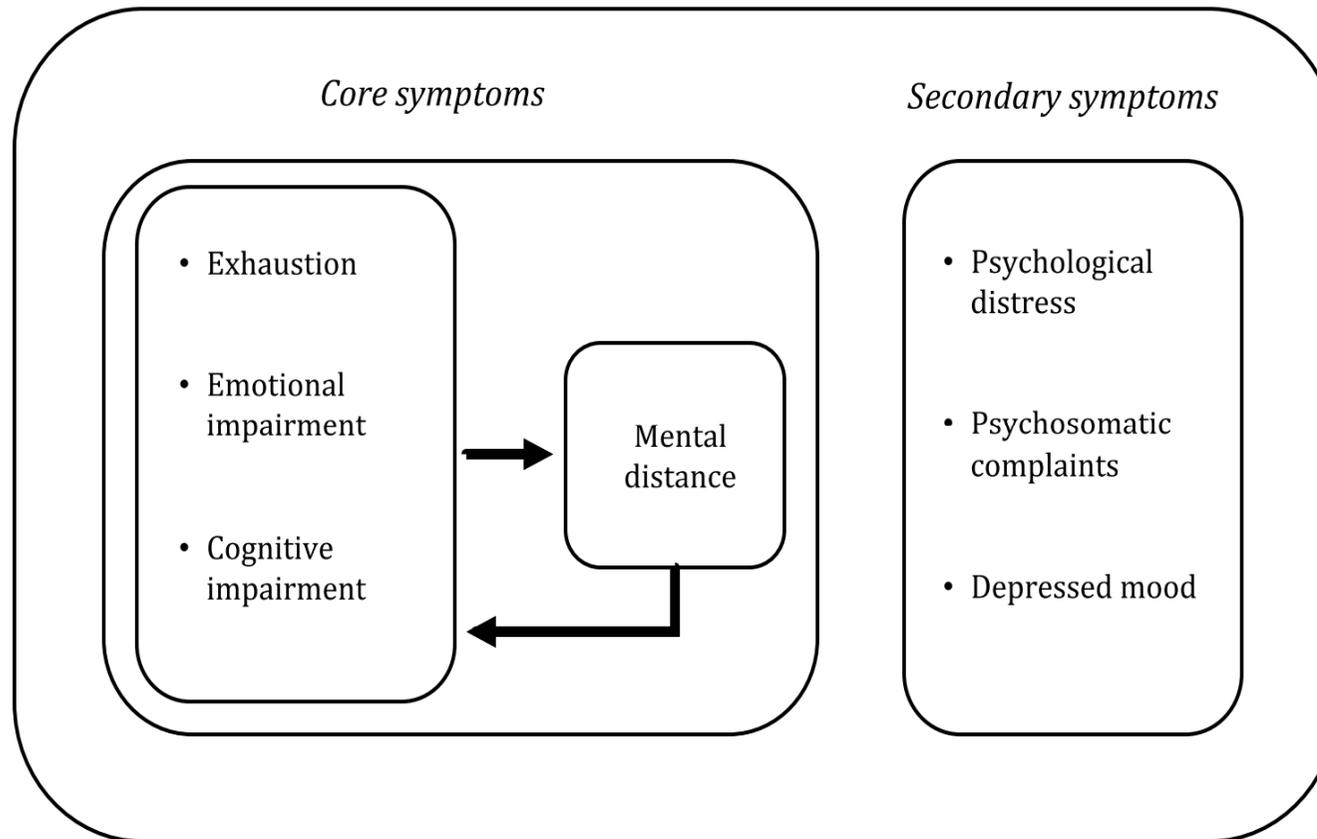
Theoretical background: measuring burnout

Problems of MBI („golden standard“ for burnout measurement):

- **Conceptual:** factorial concept; two core dimensions (emotional exhaustion, depersonalization), unrelated personal accomplishment; generalization by MBI-GS (exhaustion, cynicism, efficacy)
- **Technical:** unclear cross-national factorial validity / invariance; rather old US norms; missing general burnout-score and cut-off
- **Practical:** difficult access / commercial interests of publisher; no burnout diagnosis (e.g., technical problems)

(Schaufeli, de Witte & Desart, 2019)

Theoretical background: BAT concept



(Schaufeli, de Witte & Desart, 2019, p. 29)

Sample T1

Online employee survey (representative for age/sex in Germany/Austria)

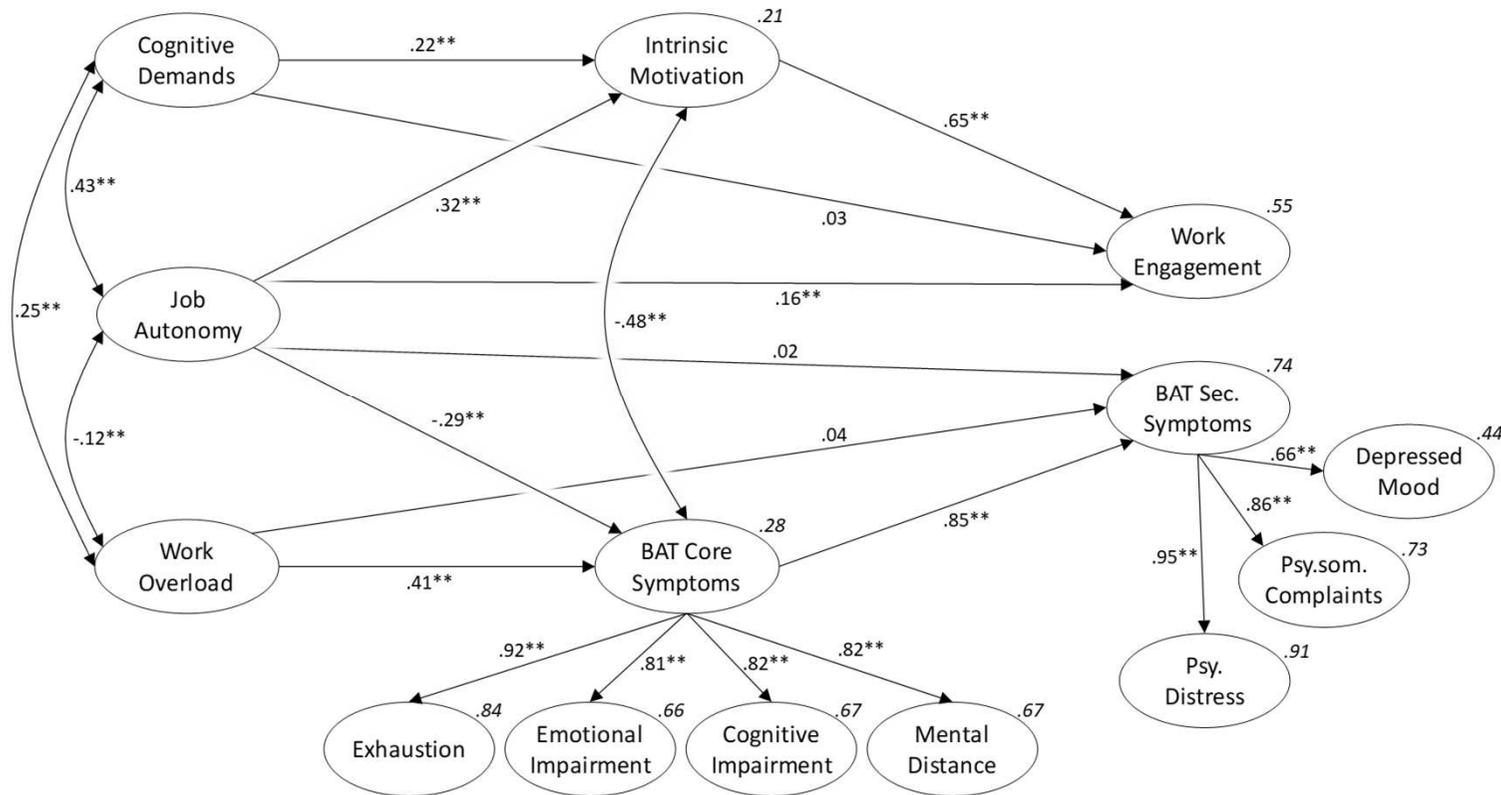
supported by professional survey institute

- **N=2132** (Germany: 1073; Austria: 1059)
- all economic sectors; 37.1% administrative/operative
- 49.3% women
- Age: 42.4 years [16; 69]
- Education: 3.1% primary, 64.9% intermediary, 32.0% higher
- 36.5% supervisors
- Working hours (actual): 35.8 h/w (contractual: 38.8 h/w)

Measures T1 (N=2132)

	# Items	Range	DE [M (SD) α]		AT [M (SD) α]	Total [M (SD) α]
TAA Screening						
Cognitive Demands	3	1–5	3.69 (0.86) .83	ns	3.76 (0.87) .84	3.73 (0.86) .83
Job Autonomy	3	1–5	3.69 (0.98) .90	ns	3.71 (1.00) .89	3.70 (0.99) .89
Work Overload	3	1–5	2.91 (1.04) .86	ns	2.90 (1.08) .86	2.90 (1.06) .86
Motivation						
Intrinsic Work Motivation	3	1–5	4.07 (0.87) .87	ns	4.13 (0.90) .86	4.10 (0.89) .87
Engagement						
Work Engagement	3	1–7	4.80 (1.41) .90	ns	4.91 (1.43) .90	4.86 (1.42) .90
BAT Core Symptoms						
Exhaustion	8	1–5	2.40 (0.82) .92	ns	2.37 (0.84) .92	2.38 (0.83) .92
Emotional Impairment	5	1–5	1.84 (0.80) .90	ns	1.81 (0.79) .89	1.82 (0.80) .90
Cognitive Impairment	5	1–5	2.05 (0.75) .90	ns	2.01 (0.76) .91	2.03 (0.76) .91
Mental Distance	5	1–5	2.03 (0.87) .87	ns	2.03 (0.95) .90	2.03 (0.91) .89
Global Score	23	1–5	2.12 (0.70) .96	ns	2.09 (0.72) .96	2.11 (0.71) .96
BAT Secondary Symptoms						
Psychological Distress	6	1–5	2.38 (0.85) .84	ns	2.32 (0.86) .83	2.35 (0.86) .84
Psychosomatic Complaints	5	1–5	2.05 (0.78) .80	ns	2.04 (0.81) .81	2.04 (0.79) .80
Depressed Mood	6	0–4	0.38 (0.69) .92	ns	0.38 (0.71) .92	0.38 (0.70) .92

Test (SEM) of Model T1



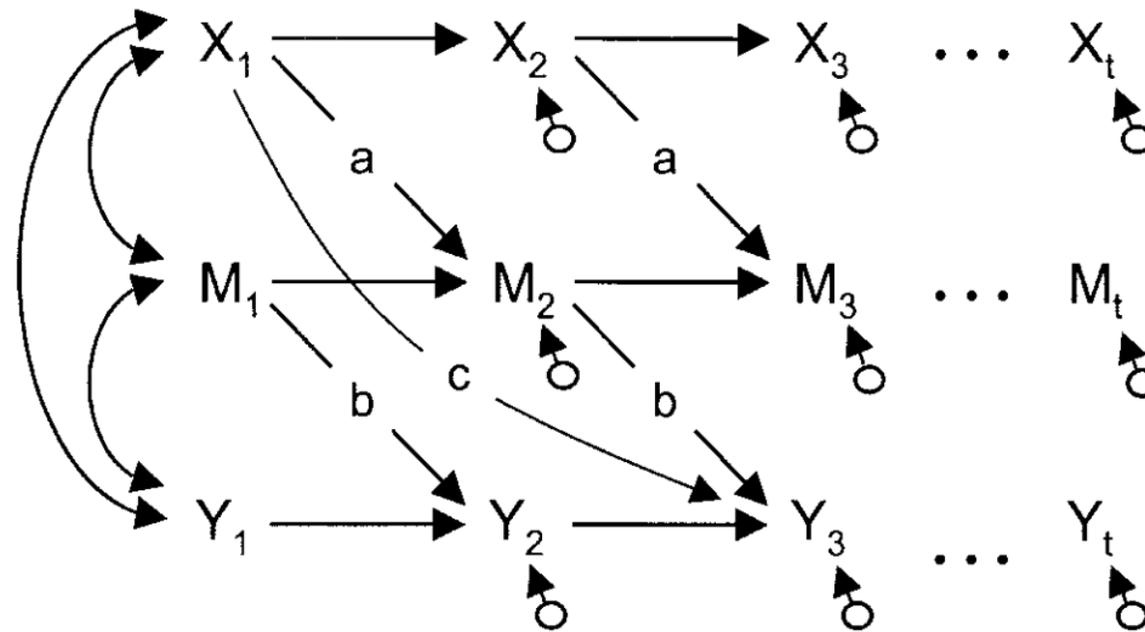
	χ^2	df	χ^2/df	CFI	TLI	RMSEA [CI]
Work Design Model	10997.52**	1409	7.81	.88	.88	.06 [.06, .06]

Measures T1-T3 (N=781; time lags: 6 months)

	T1 [M (SD) α]	T2 [M (SD) α]	T3 [M (SD) α]
TAA Screening			
Cognitive Demands	3.74 (0.86) .83	3.68 (0.87) .85	3.68 (0.86) .85
Job Autonomy	3.75 (0.99) .90	3.73 (0.97) .90	3.71 (0.95) .89
Work Overload	2.92 (1.03) .86	2.84 (1.03) .86	2.93 (1.03) .87
Motivation			
Intrinsic Work Motivation	4.14 (0.89) .90	4.12 (0.90) .89	4.12 (0.91) .90
Engagement			
Work Engagement	4.89 (1.42) .90	4.91 (1.45) .92	4.93 (1.42) .91
BAT Core Symptoms			
Exhaustion	2.33 (0.82) .92	2.30 (0.83) .93	2.31 (0.84) .93
Emotional Impairment	1.75 (0.74) .89	1.72 (0.73) .89	1.73 (0.72) .89
Cognitive Impairment	1.95 (0.71) .90	1.97 (0.70) .90	1.96 (0.73) .91
Mental Distance	1.95 (0.88) .87	1.93 (0.90) .90	1.95 (0.90) .90
Global Score	2.04 (0.68) .95	2.02 (0.68) .96	2.02 (0.69) .96
BAT Secondary Symptoms			
Psychological Distress	2.32 (0.84) .84	2.28 (0.84) .83	2.28 (0.84) .83
Psychosomatic Complaints	1.99 (0.75) .78	1.94 (0.74) .78	1.98 (0.75) .80
Depressed Mood	0.32 (0.64) .91	0.31 (0.63) .91	0.31 (0.66) .93

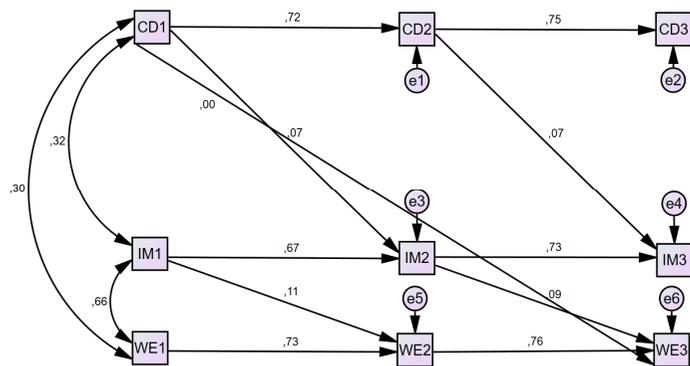
Test of longitudinal mediation

Model 5



(Cole & Maxwell, 2003, p. 563)

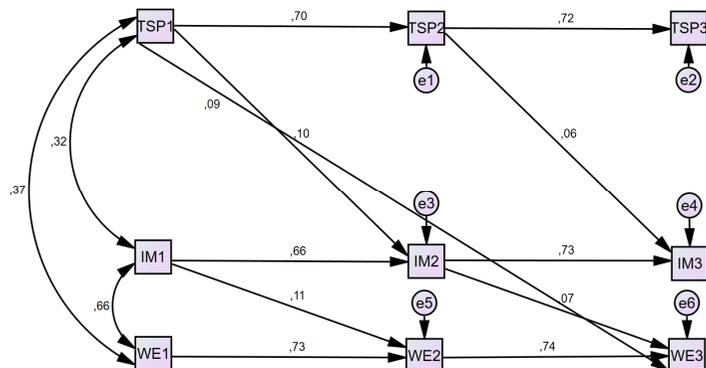
Longitudinal mediator: intrinsic motivation



cognitive demands (T1) → work engagement (T3)

effect	path	coeff	p	Boot-CI
cd1 -> im2	a	0,067	0,013	
im2 -> we3	b	0,089	<0,001	
cd1 -> we3	c	0,005	0,863	
cd1 -> we3	c'	-0,001	0,966	
cd1 -> im2 -> we3	a*b	0,006		0,001 0,018

⇒ indirect-only mediation

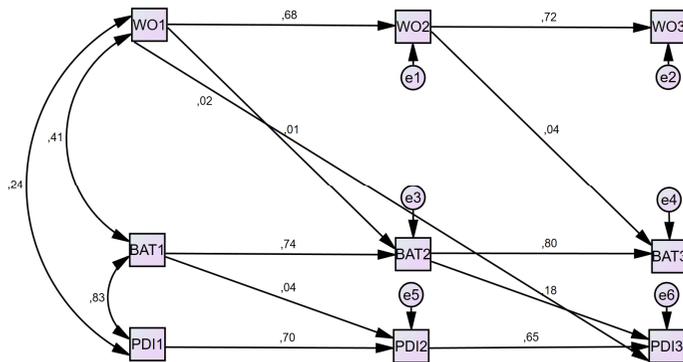


job autonomy (T1) → work engagement (T3)

effect	path	coeff	p	Boot-CI
tsp1 -> im2	a	0,097	<0,001	
im2 -> we3	b	0,075	0,002	
tsp1 -> we3	c	0,098	0,010	
tsp1 -> we3	c'	0,090	0,013	
tsp1 -> im2 -> we3	a*b	0,007		0,002 0,018

⇒ complementary (partial) mediation

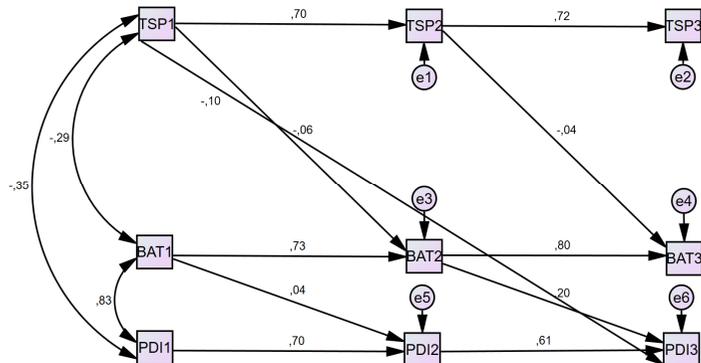
Longitudinal mediator: core burnout



work overload (T1) → psychological distress (T3)

effect	path	coeff	p	Boot-CI
wo1 -> bat2	a	0,010	0,786	
bat2 -> pdi3	b	0,185	0,011	
wo1 -> pdi3	c	0,022	0,323	
wo1 -> pdi3	c'	0,020	0,503	
wo1 -> bat2 -> pdi3	a*b	0,002		-0,007 0,013

⇒ no mediation

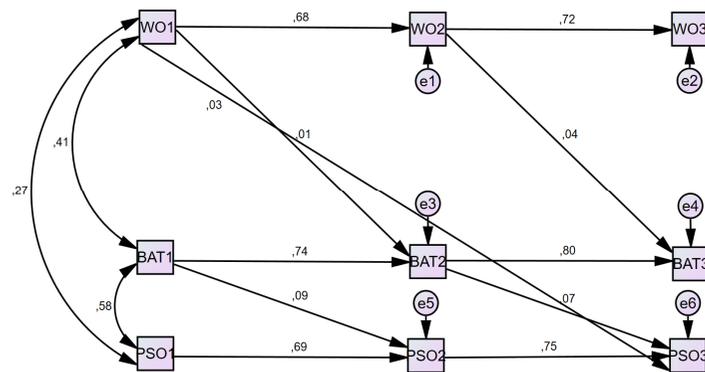


job autonomy (T1) → psychological distress (T3)

effect	path	coeff	p	Boot-CI
tsp1 -> bat2	a	-0,060	0,069	
bat2 -> pdi3	b	0,198	0,004	
tsp1 -> pdi3	c	-0,107	0,013	
tsp1 -> pdi3	c'	-0,095	0,010	
tsp1 -> bat2 -> pdi3	a*b	-0,012		-0,031 -0,004

⇒ complementary (partial) mediation

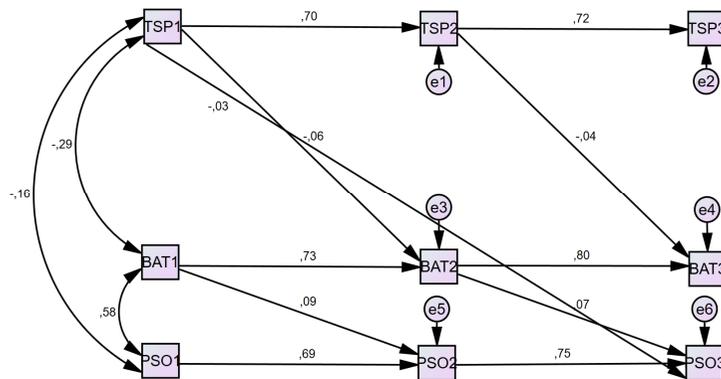
Longitudinal mediator: core burnout



work overload (T1) → psychosomatic complaints (T3)

effect	path	coeff	p	Boot-CI
wo1 -> bat2	a	0,010	0,711	
bat2 -> pso3	b	0,072	0,003	
wo1 -> pso3	c	0,033	0,215	
wo1 -> pso3	c'	0,032	0,243	
wo1 -> bat2 -> pso3	a*b	0,001		-0,003 0,005

⇒ no mediation

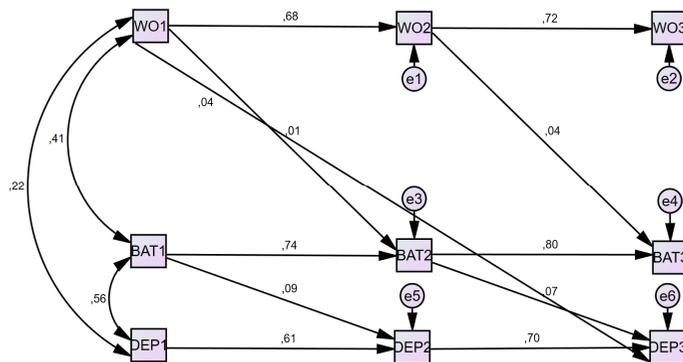


job autonomy (T1) → psychosomatic complaints (T3)

effect	path	coeff	p	Boot-CI
tsp1 -> bat2	a	-0,060	0,014	
bat2 -> pso3	b	0,075	<0,001	
tsp1 -> pso3	c	-0,035	0,091	
tsp1 -> pso3	c'	-0,031	0,184	
tsp1 -> bat2 -> pso3	a*b	-0,005		-0,011 -0,001

⇒ indirect-only mediation

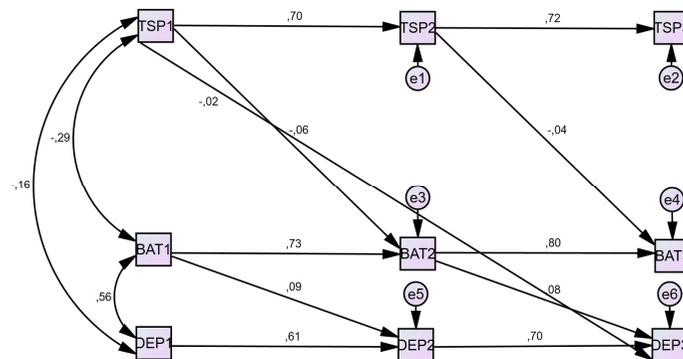
Longitudinal mediator: core burnout



work overload (T1) → depressed mood (T3)

effect	path	coeff	p	Boot-CI
wo1 -> bat2	a	0,010	0,747	
bat2 -> dep3	b	0,070	0,035	
wo1 -> dep3	c	0,037	0,270	
wo1 -> dep3	c'	0,037	0,297	
wo1 -> bat2 -> dep3	a*b	0,001		-0,002 0,003

⇒ no mediation



job autonomy (T1) → depressed mood (T3)

effect	path	coeff	p	Boot-CI
tsp1 -> bat2	a	-0,060	0,069	
bat2 -> dep3	b	0,077	0,047	
tsp1 -> dep3	c	-0,022	0,565	
tsp1 -> dep3	c'	-0,018	0,370	
tsp1 -> bat2 -> dep3	a*b	-0,005		-0,013 -0,001

⇒ indirect-only mediation

Summary

Cross-sectional evidence for tripartite work design model with mediation effects:

- **full**: cognitive demands → **motivation** → engagement
- **partial**: autonomy → **motivation** → engagement
- **full**: autonomy → **core burnout** → secondary symptoms
- **full**: work overload → **core burnout** → secondary symptoms

Longitudinal mediation effects (T1-T3):

- **indirect-only**: cognitive demands → **motivation** → engagement
- **complem. partial**: autonomy → **motivation** → engagement
- **none**: work overload → **core burnout** → secondary symptoms
- **complem. partial / indirect-only**: autonomy → **core burnout** → secondary symptoms

Limitations and outlook

- ! single source – single method
- examination of full model: latent SEM, additional indicators for learning demands, work-related resources, and job stressors
- further statistical tests: factorial invariance, drop-out analysis, ...



Thank you for your interest

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