

## S2: EFAs & CFAs

### S2-TableS1a: PPQ Cronbach Alphas before removal of items

This table displays the SPSS output of the Cronbach alphas of the PPQ consisting of 22 items (see *S1-Appendix: S1-Table2*). \* denotes items that we subsequently removed.

Reliability Statistics				
Cronbachs				
Alpha	N of Items			
.783	22			

  

Item-Total-Statistics				
PPQ Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Publication of scientific articles is the most important aspect of my work*	65.43	113.930	-.043	.796
The number of scientific publications contributes to my status*	64.76	110.446	.149	.784

I experience my colleagues' assessment of me on the basis of my publications as stressful	65.54	99.204	.532	.761
I experience the publication criteria formulated by my university for my appointment or reappointment as professor as a stimulus*	65.45	112.128	.027	.793
Publication pressure puts pressure on relationships with fellow-researchers	65.38	99.598	.536	.761
In my opinion the pressure to publish scientific articles has become too high	64.75	99.966	.587	.760
The competitive scientific climate stimulates me to publish more*	65.78	110.432	.089	.790
My colleagues judge me mainly on the basis of my publications	65.58	105.869	.293	.777

In spite of the pressure to publish, I enjoy investing in other activities that I feel complement research*	66.76	113.442	-.012	.792
In my experience, professors maintain their teaching skills well, despite publication pressure*	65.64	106.871	.262	.779
I cannot confide innovative research proposals to my colleagues	66.27	103.657	.378	.772
Without publication pressure, my scientific output would be of higher quality	65.66	97.830	.596	.757
My scientific publications contribute to better (future) astronomy*	66.69	111.162	.143	.783

Publication pressure results in me publishing more without it compromising the quality of my scientific work*	65.47	110.134	.131	.786
I suspect that publication pressure leads some colleagues (whether intentionally or not) to fabricate data	65.89	102.337	.413	.769
The validity of astronomy literature is increased by the publication pressure in academia*	65.11	108.292	.223	.781
Publication pressure leads to serious worldwide doubts about the validity of research results	65.43	100.466	.520	.763
Publication pressure harms science	65.07	98.834	.598	.758

Without publication pressure, I would invest more time into publishing ancillary & meta data	65.61	100.077	.522	.763
In spite of the pressure to publish, I take the time to make my reduction algorithm available and usable for other researchers*	66.13	109.239	.151	.785
Without publication pressure I would spend more time on writing my publication in a clearly understandable and replicable way	65.69	97.946	.565	.759
How often do you feel pressure to publish?	65.59	100.945	.532	.763

**S2-TableS1b: PPQ Cronbach Alphas after removal of items**

This table displays the SPSS output of the Cronbach alphas of the cleaned PPQ after removal of items, which resulted in 12 remaining items.

Reliability Statistics		
Cronbachs Alpha	Cronbachs Alpha for standardised Items	N of Items
.871	.871	12

Item-Total-Statistics					
Cleaned PPQ Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I experience my colleagues' assessment of me on the basis of my publications as stressful	34.51	73.685	.589	.424	.859
Publication pressure puts pressure on relationships with fellow-researchers	34.36	73.539	.620	.419	.857
In my opinion the pressure to publish scientific articles has become too high	33.66	75.354	.610	.465	.858

My colleagues judge me mainly on the basis of my publications	34.57	79.577	.356	.225	.873
I cannot confide innovative research proposals to my colleagues	35.27	78.166	.427	.237	.869
Without publication pressure, my scientific output would be of higher quality	34.63	72.761	.655	.530	.854
I suspect that publication pressure leads some colleagues (whether intentionally or not) to fabricate data	34.82	77.464	.426	.237	.869
Publication pressure leads to serious worldwide doubts about the validity of research results	34.37	75.231	.566	.413	.860
Publication pressure harms science	33.97	75.126	.595	.497	.859

Without publication pressure, I would invest more time into publishing ancillary & meta data	34.57	74.144	.600	.432	.858
Without publication pressure I would spend more time on writing my publication in a clearly understandable and replicable way	34.71	72.160	.656	.547	.854
How often do you feel pressure to publish?	34.59	74.540	.588	.392	.859

**S2-TableS1c: CATPCA for cleaned PPQ**

Cleaned PPQ Items	Pattern Matrix		
	Dimension		
	F1 (Extent & Consequences on one's own conduct of research)	F2 (Impact on Relationship with colleagues)	F3 (Suspected consequences on science)
Without publication pressure I would spend more time on writing my publication in a clearly understandable and replicable way	.811	.008	-.022
Without publication pressure, my scientific output would be of higher quality	.809	-.058	.057
Without publication pressure, I would invest more time into publishing ancillary & meta data	.779	.001	-.073
Publication pressure harms science	.639	-.138	.328

In my opinion the pressure to publish scientific articles has become too high	.585	.115	.167
How often do you feel pressure to publish?	.522	.521	-.227
My colleagues judge me mainly on the basis of my publications	-.169	.866	-.060
I experience my colleagues' assessment of me on the basis of my publications as stressful	.298	.662	-.099
I cannot confide innovative research proposals to my colleagues	-.300	.595	.506
[Publication pressure puts pressure on relationships with fellow-researchers	.167	.552	.240
I suspect that publication pressure leads some colleagues (whether intentionally or not) to fabricate data	.005	-.004	.799

Publication pressure leads to serious worldwide doubts about the validity of research results	.368	-.103	.632
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**S2-TableS2a: CATPCA for ERI**

ERI Items	Pattern Matrix				
	Dimension				
	F5 (Overcommitment)	F1 (Reward: Job situation)	F3 (Effort)	F2 (Reward: Salary)	F4 (Reward: Receiving praise/ respect)
Work rarely lets me go, it is still on my mind when I go to bed	.850	.031	-.018	.044	-.095
As soon as I get up in the morning I start thinking about work	.838	.090	-.104	.013	.018
After I finish my work day, I can easily relax and 'switch off' work	.736	.019	.004	.011	-.147
If I postpone something at work that I was supposed to do today I'll have trouble sleeping at night	.651	-.112	.016	.074	-.020
People close to me say I sacrifice too much for my job	.494	.010	.222	-.203	.029
My job security is poor	-.094	.906	.107	-.025	-.279
My job promotion prospects are good	.156	.689	.041	.077	.171

I have experienced or I expect to experience an undesirable change in my work situation	-.021	.658	-.181	-.231	.151
Considering all my efforts and achievements, my job promotion prospects are adequate	.071	.631	.027	.252	.167
I have many interruptions and disturbances while performing my job	-.219	.145	.829	.106	-.258
I have constant time pressure due to a heavy work load	.144	.034	.740	-.055	.097
Over the past few years, my job has become more and more demanding	.060	-.002	.693	-.170	.193
I get easily overwhelmed by time pressures at work	.113	-.256	.563	.108	.074
Considering all my efforts and achievements, my salary is adequate	.022	.014	-.005	.917	-.019

My salary is fair compared to others who have similar work tasks	.008	-.047	-.016	.888	.069
I receive the respect I deserve from my supervisor or a respective relevant person	-.082	-.077	.013	-.017	.907
Considering all my efforts and achievements, I receive the respect and prestige I deserve at work	-.107	.155	.020	.113	.721

**S2-TableS2b: Cronbach Alphas for Effort Construct**

Reliability Statistics				
Cronbachs				
Alpha	N of Items			
.691	4			

  

Item-Total-Statistics				
ERI F3 Items (Effort)	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I have constant time pressure due to a heavy work load	10.51	6.109	.616	.532
I have many interruptions and disturbances while performing my job	10.66	7.295	.364	.694
Over the past few years, my job has become more and more demanding	10.46	6.900	.490	.618
I get easily overwhelmed by time pressures at work	11.05	6.691	.443	.648

**S2-TableS2c: Cronbach Alphas for Overcommitment Construct**

<b>Reliability Statistics</b>				
Cronbachs Alpha	N of Items			
.780	5			

  

<b>Item-Total-Statistics</b>				
ERI F5 Items (Overcommitment)	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
As soon as I get up in the morning I start thinking about work	13.36	13.876	.536	.745
After I finish my work day, I can easily relax and 'switch off' work	13.62	12.880	.577	.731
People close to me say I sacrifice too much for my job	13.95	13.299	.493	.761
Work rarely lets me go, it is still on my mind when I go to bed	13.52	12.527	.683	.697
If I postpone something at work that I was supposed to do today I'll have trouble sleeping at night	14.21	13.216	.499	.759

**S2-TableS2d: Cronbach Alphas for Reward Construct**

<b>Reliability Statistics</b>				
Cronbachs Alpha	N of Items			
.805	8			

  

<b>Item-Total-Statistics</b>				
ERI F1+F2+F4 Items (Reward)	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I receive the respect I deserve from my supervisor or a respective relevant person	21.90	37.123	.451	.793
My job promotion prospects are good	22.96	35.394	.564	.777
I have experienced or I expect to experience an undesirable change in my work situation	22.39	36.035	.431	.797
My job security is poor	22.31	34.700	.413	.805
Considering all my efforts and achievements, I receive the respect and prestige I deserve at work	22.33	35.336	.627	.770

Considering all my efforts and achievements, my job promotion prospects are adequate	22.76	33.467	.685	.759
Considering all my efforts and achievements, my salary is adequate	22.53	34.976	.520	.783
My salary is fair compared to others who have similar work tasks	22.43	35.253	.520	.783

**S2-TableS3: Results of the comparative factor analyses (CFAs) for all independent variables**

<b>Independent Variable</b>	<b>Comparative Fit Index (CFI)</b>	<b>Tucker-Lewis Index (TLI)</b>	<b>Root Mean Square Error of Approximation (RMSEA)</b>	<b>Difference to model without accounting for covariances between indicators</b>
Publication Pressure (PPQ)	0.958	0.939	0.063 90%CI(.057, .069).	$\chi^2(5) = 374.19$ ; $p < .001$
Effort Reward Imbalance (ERI)	0.967	0.953	0.044 90%CI(.039, .048)	$\chi^2(18) = 475.02$ ; $p < .001$
Organisational Justice: Resource Allocation	0.977	0.970	0.055 90%CI(.050, .059)	$\chi^2(8) = 3655.6$ ; $p < .001$
Organisational Justice: Peer Review	0.969	0.960	0.064 90%CI(.060, .069)	$\chi^2(5) = 1708.7$ ; $p < .001$
Organisational Justice: Grant Application	0.979	0.971	0.055 90%CI(.049, .061)	$\chi^2(10) = 1220.6$ ; $p < .001$
Organisational Justice: Telescope Time Application	0.963	0.952	0.068 90%CI(0.062, 0.074)	$\chi^2(7) = 982.7$ ; $p < .001$