

as “I frequently imagine how I will achieve my hopes and aspirations”; *prevention focus* is measured by 7 items such as “I am anxious that I will fall short of my responsibilities and obligations”. The survey questions were adapted by removing schooling related 4 items, such as “I often worry that I will fail to accomplish my academic goals” to better fit the research context. Respondents were asked to evaluate each item by choosing a number ranging from 1 (not at all true of me) to 10 (very true of me).

### **Data Analysis Approach**

#### ***Descriptive statistics and Pearson correlation analysis***

Table 1 shows the mean and standard deviation of each variable, with a Pearson correlation analysis having been conducted to study the correlation of all variables. As indicated, PoQ is positively correlated with total tenure, relative deprivation, anger, prevention focus and knowledge withholding. relative deprivation is positively correlated with anger, prevention focus, knowledge withholding and silence. Anger is positively correlated with all dependent variables, i.e. knowledge withholding, silence and negative gossiping.

Table 1

*Means, Standard Deviations, and Bivariate Correlations Among the Study Variables*  
(*N*=188)

		<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1	Age	34.78	6.83	--										
2	Education	5.76	1.22	-0.075	--									
3	Hierarchy	3.18	1.95	0.245**	-0.040	--								
4	Total Tenure	10.04	7.18	0.928**	-0.197**	0.317**	--							
5	POQ	3.84	1.11	0.124	-0.069	-0.039	0.144*	--						
6	Relative deprivation	4.05	0.94	0.081	-0.139	-0.117	0.107	0.387**	--					
7	Anger	2.80	1.04	-0.011	-0.052	-0.067	0.006	0.146*	0.251**	--				
8	Promotion Focus	6.94	1.49	-0.190**	0.083	0.109	-0.145*	0.119	0.124	-0.125	--			
9	Prevention Focus	5.23	1.41	-0.103	0.007	-0.134	-0.052	0.234**	0.283**	0.278**	0.319**	--		
10	Silence	2.67	1.13	-0.029	-0.062	-0.167*	-0.128	-0.124	-0.198**	-0.166*	-0.133	0.130	--	
11	Knowledge withholding	2.62	1.13	0.035	-0.059	-0.053	0.030	0.234**	0.189**	0.194**	-0.124	0.71	0.394**	--
12	Negative gossiping	2.29	1.12	-0.081	-0.145*	-0.067	-0.101	0.127	0.091	0.223**	-0.207	0.067	0.080	0.164*

*Note.* Educational level: 1 = primary school; 2 = secondary school; 3 = high school; 4 = professional bachelor; 5 = academic bachelor; 6 = master; 7 = master-after-master; 8 = doctorate. Hierarchy: 1 = researcher; 2 = employee; 3 = first level manager; 4 = low-level manager; 5 = mid-level manager; 6 = director; 7 = vice president; 8 = self-employed. POQ = perceived over-qualification;

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

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

### SPSS Process Model Analysis

描述SPSS操作过程

Due to the complexity of this research model, SPSS macro PROCESS (Hayes, 2017) was used to conduct various model analyses in 4 steps. First, to test hypotheses 4a and 4b, 2 modera-

tion analyses were conducted using PROCESS MODEL 1 to analyse the moderating role of prevention focus and promotion focus on relationship of PoQ and relative deprivation. Second, 7 simple mediation analyses were conducted using PROCESS MODEL 4 to analyse the following hypothesis: relative deprivation mediates the relationship of PoQ and anger (hypothesis 1), anger mediates the relationship of relative deprivation and silence, knowledge withholding and negative gossiping (hypothesis 2a, 2b, 2c), additionally, to further explore, I conducted additional analysis to test if relative deprivation mediates the relationship of PoQ and silence, knowledge withholding and negative gossiping. Third, to test hypotheses 3a, 3b and 3c, I conducted 3 PROCESS MODEL 6 analyses in order to inspect the serial mediation role of relative deprivation and anger on PoQ and the 3 output CWBs. Finally, to test the moderated mediation, I conducted 6 different PROCESS MODEL 7 analyses to test whether the relationship between PoQ and CWB – silence, knowledge withholding and negative gossiping, is mediated by relative deprivation and moderated by prevention and/or promotion regulatory focus (hypotheses 5a, 5b, 5c, 6a, 6b & 6c). All the above analyses included age, educational level, hierarchy and total tenure as co-variants, all variables that defined products are mean centered in SPSS, and the criteria for statistical significance is  $p < 0.05$ .

## Results

### *Direct, total and indirect effect*

描述SPSS操作结果

The direct effect and total effect of PoQ on the outcome variables and co-variants are displayed in Table 2. Evidence of significant direct effect of PoQ on relative deprivation is found,  $b = 0.277, p < 0.001$ ; there is also significant direct effect of PoQ on knowledge withholding,  $b = 0.162, p < 0.05$ ; as well as significant total effect of PoQ on knowledge withholding,  $b = 0.198, p < 0.01$ .

The indirect effect of PoQ on anger via relative deprivation is 0.075, 95% CI is 0.017 to

0.148, indicating relative deprivation significantly mediates the relationship of PoQ and anger (hypothesis 1 is significant); the indirect effect of relative deprivation on silence via anger is 0.016, 95% CI is -0.017 to 0.070 indicating anger does not significantly mediate the relationship of relative deprivation and silence (hypothesis 2a is insignificant); the indirect effect of relative deprivation on knowledge withholding via anger is 0.037, 95% CI is 0.001 to 0.086, indicating anger does significantly mediate the relationship of relative deprivation and knowledge withholding (hypothesis 2b significant); the indirect effect of relative deprivation on negative gossiping via anger is 0.051, 95% CI is 0.004 to 0.120 indicating anger significantly mediates the relationship of relative deprivation and negative gossiping (hypothesis 2c is significant); the indirect effect for path PoQ - relative deprivation - silence is 0.061, SE = 0.035 95% CI is -0.002 to 0.135, indicating the mediation role of relative deprivation for the relationship of PoQ and silence is insignificant; the indirect effect for path PoQ - relative deprivation - knowledge withholding is 0.032, SE = 0.024 95% CI is -0.010 to 0.083, indicating the mediation role of relative deprivation for PoQ and knowledge withholding is insignificant; the indirect effect for path PoQ - relative deprivation - negative gossiping is 0.014, SE = 0.030 95% CI is -0.038 to 0.078, indicating the mediation role of relative deprivation for PoQ and negative gossiping is insignificant.

The SPSS MODEL 6 result shows that the indirect effect of path PoQ - relative deprivation - Anger - Silence is 0.004, 95% CI is -0.004 to 0.019 indicating that relative deprivation and anger does not sequentially mediate the relationship of PoQ and silence (hypothesis 3a is insignificant); the indirect effect of path PoQ - relative deprivation - Anger - Knowledge withholding is 0.006, 95% CI is -0.001 to 0.019, indicating relative deprivation and anger does not sequentially mediate the relationship of PoQ and knowledge withholding (hypothesis 3b is insignificant); the indirect effect of path PoQ - relative deprivation - Anger - negative gossiping is 0.012, 95% CI is 0.001 to 0.034, indicating relative deprivation and anger does sequentially mediate the

relationship of PoQ on negative gossiping (hypothesis 3c is significant). All total, direct and indirect effects are summarised in Table 2.

Table 2

*Results for Total, Direct and Indirect Effects*

Predictors	Direct effect		Total effect		Indirect effect	
	<i>b</i>	95% CI	<i>b</i>	95% CI	<i>b</i>	95% CI
<b>DV = Relative deprivation</b>						
R sq = 0.237						
Constant	4.313***	[2.797, 5.828]				
PoQ	0.277 ***	[0.162, 0.393]				
Age	0.004	[-0.047, 0.056]				
Education	-0.093	[-0.200, 0.015]				
Hierarchy	-0.060	[-0.129, 0.009]				
Total tenure	0.006	[-0.045, 0.057]				
PoQ * Prevention	-0.081*	[-0.161, -0.001]				
PoQ * Promotion	0.016	[-0.065, 0.097]				
<b>DV = Anger</b>						
R sq = 0.029						
Constant	2.113*	[0.296, 3.930]	3.017***	[1.284, 4.750]		
PoQ	0.056	[-0.089, 0.201]	0.131	[-0.006, 0.268]	0.075*	[0.017, 0.148]
relative deprivation	0.245	[0.072, 0.418]				
Age	-0.014	[-0.076, 0.047]	-0.017	[-0.080, 0.046]		
Education	-0.010	[-0.140, 0.120]	-0.028	[-0.160, 0.104]		

Hierarchy	-0.021	[-0.103, 0.613]	-0.037	[-0.120, 0.046]
Total tenure	0.010	[-0.051, 0.071]	0.015	[-0.047, 0.077]

**DV = Silence**

R sq = 0.106

Constant	1.756	[-0.389, 3.901]	2.409*	[0.333, 4.484]		
PoQ	0.074	[-0.081, 0.229]	0.129	[-0.019, 0.277]	0.055	[-0.002, 0.124]
relative deprivation	0.212*	[-0.031, 0.393]	0.227*	[0.050, 0.404]	0.016	[-0.017, 0.070]
Anger	0.065	[-0.098, 0.229]				
Age	0.040	[-0.026, 0.106]	0.040	[-0.027, 0.106]		
Education	-0.075	[-0.213, 0.064]	-0.092	[-0.231, 0.046]		
Hierarchy	-0.023	[-0.113, 0.066]	-0.034	[-0.123, 0.055]		
Total tenure	-0.063	[-0.128, 0.001]	-0.062	[-0.127, 0.004]		

**DV = Knowledge withholding**

R sq = 0.085

Constant	1.849*	[0.091, 3.606]	2.382**	[0.683, 4.082]		
PoQ	0.162*	[0.035, 0.290]	0.198**	[0.076, 0.319]	0.035	[-0.006, 0.086]
relative deprivation	0.136	[-0.009, 0.282]	0.173*	[0.031, 0.316]	0.037*	[0.001, 0.086]
Anger	0.104	[-0.030, 0.238]				
Age	0.008	[-0.046, 0.062]	0.008	[-0.047, 0.062]		
Education	-0.020	[-0.133, 0.093]	-0.031	[-0.144, 0.083]		
Hierarchy	0.003	[-0.070, 0.076]	-0.002	[-0.075, 0.071]		
Total tenure	-0.012	[-0.065, 0.041]	-0.011	[-0.064, 0.043]		

**DV = Negative gossiping**

R sq = 0.070

Constant	1.416	[-0.747, 3.578]	2.007	[-0.098, 4.112]		
PoQ	0.115	[-0.042, 0.271]	0.134	[-0.016, 0.284]	0.019	[-0.037, 0.082]

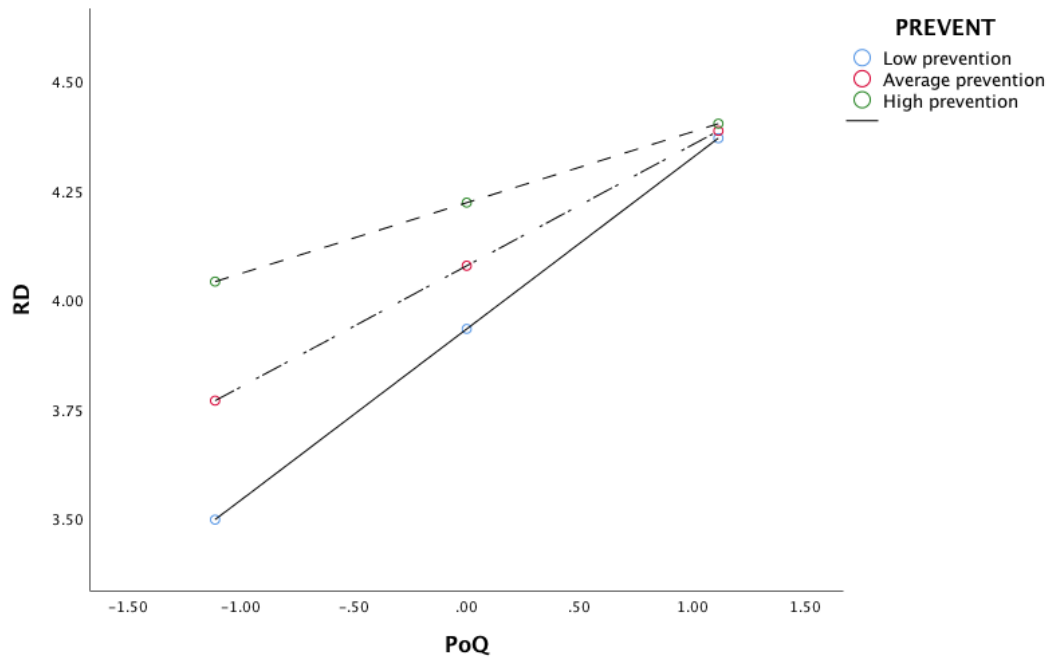
relative deprivation	0.036	[-0.147, 0.219]	0.087	[-0.095, 0.269]	0.051*	[0.004, 0.120]
Anger	0.219**	[0.054, 0.385]				
Age	0.043	[-0.023, 0.110]	0.041	[-0.026, 0.109]		
Education	-0.171*	[-0.310, -0.031]	-0.175*	[-0.316, -0.035]		
Hierarchy	0.003	[-0.086, 0.093]	0.006	[-0.085, 0.096]		
Total tenure	-0.063	[-0.128, 0.003]	-0.062	[-0.129, 0.004]		

*Note.* All variables that define products are mean-centered when running all the model analyses in SPSS. CI = confidence interval \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ . The indirect effect of PoQ on silence, knowledge withholding and negative gossiping is the total indirect effect based on model 6 (using relative deprivation and Anger as serial mediators); the direct, total and indirect effect of relative deprivation on silence, knowledge withholding and negative gossiping are based on model 4 testing mediating role of anger on the relationship of relative deprivation and the 3 output variables .

#### ***Conditional direct effect of perceived over-qualification***

To test the moderating role of prevention and promotion focus on the relationship of PoQ and relative deprivation, 2 SPSS MODEL 1 analyses were conducted. The result shows that the effect of the interaction of PoQ and promotion focus on relative deprivation is 0.016,  $p = 0.699 > 0.05$  indicating that promotion focus does not moderate the relationship of PoQ and relative deprivation (hypothesis 4a is insignificant); the effect of the interaction of PoQ and prevention focus on relative deprivation is -0.081,  $p = 0.046 < 0.05$  indicating that prevention focus moderates the relationship of PoQ and relative deprivation, the conditional effect interpretation (as depicted in Figure 2) that the more prevention focused an employee is, the less pronounced the positive effect of PoQ on relative deprivation (hypothesis 4c is significant). Furthermore, the Johnson-

Neyman significance regions indicated that the range of prevention focus, which is lower than 6.723 above the mean, significantly moderates the direct effect of PoQ and relative deprivation.



**FIGURE 2: MODERATION EFFECT OF PREVENTION FOCUS ON POQ AND RELATIVE DEPRIVATION**

### *Conditional indirect effect of perceived over-qualification*

To inspect the moderated mediation result of PoQ on the output variables using regulatory focus as moderator, relative deprivation as mediator, SPSS PROCESS model 7 analysis was conducted 6 times. The first 3 analyses were conducted using promotion focus as a moderator and relative deprivation as a mediator to inspect the indirect effect of PoQ on silence, knowledge withholding and negative gossiping, while prevention focus was added as one of the covariants. The latter 3 analyses were conducted using prevention focus as a moderator to inspect the indirect effect of PoQ on Silence, knowledge withholding and negative gossiping, while promotion focus



was added as one of the covariants. The result (as displayed in Table 3) shows that the direct effect of PoQ on Silence is 0.093,  $p = 0.237$ , for prevention focus on -1.411 below the mean, the indirect effect of path PoQ - relative deprivation - Silence is 0.089, 95% CI is 0.006 to 0.184 indicating a significant indirect effect; for prevention focus at the mean, the indirect effect of path PoQ - relative deprivation - Silence is 0.063, 95% CI is 0.004 to 0.128, indicating significant indirect effect as well; however for prevention focus of 1.411 above the mean, the indirect effect of path PoQ - relative deprivation - Silence is 0.037, 95% CI is -0.002 to 0.099 indicating an insignificant indirect effect. The fact that there are significant but different indirect effects for different levels of prevention focus indicates that there is moderated mediation effect in this model; however, this is only significant for prevention focus lower than 1.49 above the mean (0), according to the Johnson-Neyman significance region plot (hypothesis 6a is significant for lower range of prevention focus). All other moderated mediation tests give results that are not significant (hypothesis 5a, 5b, 5c, 6b and 6c are insignificant).

Table 3

*Conditional Indirect Effects of Perceived Over-qualification on Silence Through Relative Deprivation at Levels of Prevention Focus (N = 188)*

	Effect	BootSE	95% Bias-corrected bootstrap confidence interval
Prevention focus			
Low (-1.411 below mean)	0.089*	0.046	0.006 to 0.184
Moderate (equals to the mean)	0.063*	0.032	0.004 to 0.128
High (1.411 above mean)	0.037	0.027	-0.002 to 0.099

*Note.* 5000 bootstrap samples.

The results of all the hypothesis are summarised in Table 4.

Table 4

*A Summary of the Test Result of All the Hypotheses*

Hypothesis	Description	Result
H1	Relative deprivation mediates the relationship of PoQ and Anger	Significant
H2a	Anger mediates the relationship of relative deprivation and silence	Insignificant
H2b	Anger mediates the relationship of relative deprivation and knowledge withholding	Significant
H2c	Anger mediates the relationship of relative deprivation and negative gossiping	Significant
H3a	PoQ is indirectly related to silence through relative deprivation and anger	Insignificant
H3b	PoQ is indirectly related to knowledge withholding through relative deprivation and anger	Insignificant
H3c	PoQ is indirectly related to negative gossiping through relative deprivation and anger	Significant
H4a	The positive relationship between PoQ and relative deprivation is more pronounced for employees high on promotion focus relative to low on promotion focus.	Insignificant
H4b	The positive relationship between PoQ and relative deprivation is less pronounced for employees with high prevention focus relative to those with low prevention focus.	Significant

H5a	The indirect relationship between perceived over-qualification and silence that is attributable to relative deprivation is stronger at higher than at lower levels of promotion focus.	Insignificant
H5b	The indirect relationship between perceived over-qualification and knowledge withholding that is attributable to relative deprivation is stronger at higher than at lower levels of promotion focus.	Insignificant
H5c	The indirect relationship between perceived over-qualification and negative gossip that is attributable to relative deprivation is stronger at higher than at lower levels of promotion focus.	Insignificant
H6a	The indirect relationship between perceived over-qualification and silence that is attributable to relative deprivation is stronger at lower than at higher levels of prevention focus.	Significant
H6b	The indirect relationship between perceived over-qualification and knowledge withholding that is attributable to relative deprivation is stronger at lower than at higher levels of prevention focus.	Insignificant
H6c	The indirect relationship between perceived over-qualification and negative gossip that is attributable to relative deprivation is stronger at lower than at higher levels of prevention focus.	Insignificant
Additional test 1	relative deprivation mediates the relationship between PoQ and Silence	Insignificant
Additional test 2	relative deprivation mediates the relationship between PoQ and knowledge withholding	Insignificant
Additional test 3	relative deprivation mediates the relationship between PoQ and negative gossiping	Insignificant

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