Electronic Supplementary Material to

Investigating the Unified Motive Scales:

The Predictive Validity of the Achievement Motive Subscale

Stages of the Selection Process

An overview of the selection process, including proportions of pass and fail, can be found in Figure S1.

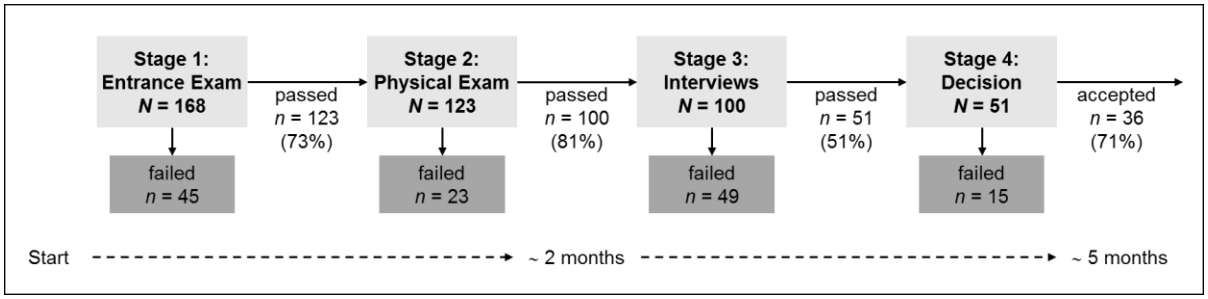

Figure S1. Overview of the selection process. Percentage of passed applicants at each stage are given in parentheses.

Stage 1

Applicants took various tests and filled out several electronic questionnaires at the test center of the police department. The tests and questionnaires based on established measures and were designed and evaluated by a recruitment consulting firm. Cognitive abilities were tested with an inventory comparable to the Berlin intelligence structure test (Jäger, Süss, & Beauducel, 1997) and language skills were assessed with three tests (orthography, grammar, dictation). Although other questionnaires were administered as well, the only questionnaire included in the evaluation of stage 1 was one regarding integrity. For these three aspects (cognitive abilities, language skills, integrity), there were clear cut-off values to pass stage 1.

For the analyses, success at stage 1 was measured with a dichotomous variable (0 = no success at stage 1, 1 = success at stage 1). Performance at stage 1 was operationalized with the test scores for cognitive abilities and language skills. The scores were *z*-standardized based on norms of the recruitment consulting firm and had a possible range from 70 to 130.

Stage 2

Five exercises testing different physical abilities (i.e., speed, upper body strength, coordination, trunk muscle strength, and aerobic/anaerobic endurance) were administered. For each exercise, between 0 and 6 points could be reached and the examination was passed if a minimum of 15 points in total and at least 1 point per exercise was earned. Requirements to gain a certain amount of points for an exercise differed for male and female applicants as an identical examination for both sexes would have favored male applicants (e.g., Birzer & Craig, 1996; Prenzler, 1997).

For the analyses, success at stage 2 was measured with a dichotomous variable (0 = no success at stage 2 or already failed at stage 1, 1 = success at stage 2). Performance at stage 2 was measured with the number of points attained at the physical ability exercises (maximum: 30 points).

Stage 3

Stage 3 included two job interviews, which were both conducted with one interviewer and two observers of the police department. Both interviews covered questions regarding the attitudes and skills of the applicants (resilience, career choice and motivation, social competence, and taking over responsibility). Their answers were rated by the two observers. Above that, each observer made a recommendation regarding job suitability. At the end of each interview day, the notes on all applicants were assessed once again and an expert consensus decision was made.

For the analyses, success at stage 3 was measured with a dichotomous variable (0 = no success at stage 3 or already failed at stage 1 or stage 2, 1 = success at stage 3). Performance at stage 3 was measured with the ratings of the four observers regarding attitudes and skills (interview scores; scale from 1 [*insufficient*] to 5 [*very good*]) and with the number of positive recommendations regarding job suitability (from 0 to 4).

Information on Additional Control Variables

Previous applications

A dichotomous variable was built to capture if applicants had already applied at a police department in the past (0 = no, 1 = yes). It was used as a control variable to preclude that previous applications had an influence on the probability of success.

Goal attainability and desirability

Attainability of the goal of becoming a police officer was assessed with two items (r = .43) on a scale ranging from 1 to 7 (e.g., "How likely is it that you achieve your goal of becoming a police officer?", *very unlikely* to *very likely*). Desirability of the goal of becoming a police officer was assessed with two items (ρ = .41)[1] on a scale ranging from 1 to 7 (e.g., "Becoming a police officer is important to me.", *no agreement* to *very much agreement*).

General self-efficacy

General self-efficacy (GSE) was used as a control variable as it could be an alternative explanation for differences in performance and success probability. GSE was measured at T_1 with two scales of the *Inventory on Competence and Control Beliefs* (*ICCB*; Krampen, 1991): *self-concept of abilities* and *internality*, of eight items each. The items were assessed on a scale ranging from 1 (*no agreement*) to 6 (*very much agreement*) and aggregated to a final score of GSE (α = .76).

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[1] Analyses showed skewed distributions for goal desirability. Therefore, Spearman's correlations are reported for this variable in order to avoid biased significance tests.

Descriptive Statistics of the Independent Variables

Table S1 provides descriptive statistics of the independent variables.

Table S1

Means (SDs) and Zero-order Correlations Among the Independent Variables

	Variable	*M (SD)*	*Min-Max*	1	2	3	4	5	6	7	8	9	10	11	12
1	UMS achievement	3.88 (0.68)	2.00-5.00	–											
2	UMS affiliation	3.82 (0.66)	2.00-5.00	.28***	–										
3	UMS power	2.36 (0.83)	0.33-4.33	.29***	.13	–									
4	UMS fear	1.56 (0.76)	0.00-3.67	-.22**	-.20**	.01	–								
5	Goal attainability	5.66 (1.02)	3.00-7.00	.28***	.14	.05	-.29***	–							
6	Goal desirability	6.38 (0.92)	1.50-7.00	.14	-.02	.07	.03	.22**	–						
7	Age	25.11 (3.74)	20.00-35.00	.01	.06	-.06	-.09	.07	-.17*	–					
8	General self-efficacy	72.20 (6.38)	59.00-91.00	.40***	.26***	.24**	-.45***	.26***	.06	.11	–				
9	Cognitive abilities	108.08 (10.54)	83.00-130.00	-.03	.06	.15	.14	-.01	-.01	-.02	-.04	–			
10	Language skills	104.02 (9.17)	85.00-123.00	-.02	-.01	.10	.07	.00	.02	.02	-.12	.52***	–		
11	Physical ability	20.97 (3.97)	11.00-27.50	-.07	-.01	-.09	-.11	.02	-.01	-.01	-.08	-.14	-.13	–	
12	Interview performance	3.20 (0.43)	2.00-4.20	.11	.15	.07	-.08	.08	-.11	.19	.19	.20*	.23*	-.10	–
13	Number of recommendations	2.60 (1.49)	0.00-4.00	.19	.16	.04	-.05	.12	-.06	.08	.15	.13	.12	-.03	.84***

Note. $N = 168$. Reported are Spearman's correlations. Although language skills were assessed at stage 1, data was not available for one participant (i.e., $n = 167$). Physical ability was assessed at stage 2 with $n = 113$, interview performance and number of recommendations were assessed at stage 3 with $n = 100$.
*$p < .05$. **$p < .01$. ***$p < .001$.

Results for Analyses at Each Stage

Probability of success

We performed logistic regression analyses to test if UMS achievement increased the probability of success at stages 1 to 3 of the selection process. The first block of the regression analyses included all control variables. In the second block, UMS achievement was added. In Tables S2 to S4, the results of the logistic regression analyses are depicted.

At each stage, the probability of success was positively associated with the achievement motive ($1.44 < OR < 1.90$). However, the effect of UMS achievement was only significant for success at stage 3 ($OR = 1.90$). Additionally, there was a significant effect of the control variable gender on the probability of success at stage 2 ($OR = 0.25$). Male applicants had a significantly higher probability of success than female applicants.

Table S2

Logistic Regression of Success at Stage 1 on Control Variables and UMS Achievement

	Success at stage 1				
Predictors	*b*	*SE*	Wald (*df* = 1)	p_{boot}	*OR*
Intercept	-0.328	3.093	0.01	.920	0.72
Control variables					
Age	0.037	0.051	0.54	.480	1.04
Gender	0.057	0.415	0.02	.898	1.06
Goal attainability	0.063	0.189	0.11	.754	1.07
Goal desirability	0.049	0.211	0.54	.804	1.05
General self-efficacy	-0.019	0.036	0.27	.611	0.98
Previous applications	-0.357	0.371	0.92	.364	0.70
UMS affiliation	-0.026	0.287	0.01	.925	0.97
UMS fear	-0.202	0.287	0.50	.508	0.82
UMS power	0.098	0.232	0.18	.689	1.10
Predictor of interest					
UMS achievement	0.365	0.306	1.42	.270	1.44

Note. $N = 168$. *b* = unstandardized bootstrap estimate of the *b*-value; *SE* = standard error; p_{boot} = bootstrap *p*-value for unstandardized regression coefficient based on bias-corrected and accelerated bootstrapping with 10,000 replications.

Table S3

Logistic Regression of Success at Stage 2 on Control Variables and UMS Achievement

	Success at stage 2				
Predictors	*b*	*SE*	Wald (*df* = 1)	p_{boot}	*OR*
Intercept	2.388	2.954	0.65	.431	10.90
Control variables					
Age	0.065	0.048	1.84	.209	1.07
Gender	-1.383	0.395	12.23	<.001	0.25
Goal attainability	-0.059	0.180	0.11	.765	0.94
Goal desirability	0.092	0.196	0.22	.637	1.10
General self-efficacy	-0.053	0.034	2.42	.137	0.95
Previous applications	-0.184	0.354	0.27	.619	0.83
UMS affiliation	-0.303	0.272	1.24	.258	0.74
UMS fear	-0.041	0.269	0.02	.876	0.96
UMS power	0.084	0.219	0.15	.709	1.09
Predictor of interest					
UMS achievement	0.388	0.295	1.73	.212	1.47

Note. $N = 168$. *b* = unstandardized bootstrap estimate of the *b*-value; *SE* = standard error; p_{boot} = bootstrap *p*-value for unstandardized regression coefficient based on bias-corrected and accelerated bootstrapping with 10,000 replications.

Table S4

Logistic Regression of Success at Stage 3 on Control Variables and UMS Achievement

	Success at stage 3				
Predictors	*b*	*SE*	Wald (*df* = 1)	p_{boot}	*OR*
Intercept	-2.460	3.105	0.63	.429	0.09
Control variables					
Age	0.043	0.048	0.80	.425	1.04
Gender	-0.443	0.425	1.09	.300	0.64
Goal attainability	0.303	0.201	2.28	.159	1.35
Goal desirability	-0.166	0.202	0.67	.420	0.85
General self-efficacy	-0.027	0.034	0.62	.437	0.97
Previous applications	-0.323	0.372	0.76	.394	0.72
UMS affiliation	-0.076	0.278	0.07	.802	0.93
UMS fear	0.119	0.277	0.18	.685	1.13
UMS power	-0.136	0.226	0.36	.543	0.87
Predictor of interest					
UMS achievement	0.640	0.317	4.07	.037	1.90

Note. $N = 168$. *b* = unstandardized bootstrap estimate of the *b*-value; *SE* = standard error; p_{boot} = bootstrap *p*-value for unstandardized regression coefficient based on bias-corrected and accelerated bootstrapping with 10,000 replications.

Performance

We performed linear regression analyses to test if UMS achievement predicted performance at the first three stages of the selection process (there were no performance measures at stage 4). For the first stage, the scores of both cognitive abilities and language skills were used as dependent variables; for the second stage, the physical ability scores were used; for the third stage, the interview scores as well as the number of recommendations were used. The first block of the regression analyses included all control variables. In the second block, UMS achievement was added. In Tables S5 to S9, the results of the linear regression analyses are depicted.

There are no significant effects of UMS achievement on the dependent variables (see also Footnote 2). However, several control variables had significant effects. First, there was a significant positive effect of UMS power on cognitive ability scores ($\beta = 0.19$, $p_{boot} = .014$). Second, there was a significant negative effect of gender on physical ability scores ($\beta = -0.40$, $p_{boot} < .001$). Third, there was a significant positive effect of age on interview performance scores ($\beta = 0.24$, $p_{boot} = .017$).

Table S5

Regression of Cognitive Abilities on Control Variables and UMS Achievement

	Cognitive abilities				
Predictors	ΔR^2	*b*	*SE*	β	p_{boot}
Step 1	.099				
Age		0.21	0.22	0.07	.381
Gender[a]		3.19	1.88	0.14	.083
Goal attainability		0.46	0.86	0.04	.568
Goal desirability		0.10	0.95	0.01	.920
General self-efficacy		-0.07	0.16	-0.04	.650
Previous applications[b]		-3.21	1.68	-0.15	.062
UMS affiliation		1.38	1.28	0.09	.279
UMS fear		1.42	1.29	0.10	.269
UMS power		2.37	1.04	0.19	.014
Step 2	.000				
UMS achievement		-0.21	1.39	-0.01	.887
Total R^2	.099				

Note. $N = 168$. *b* = unstandardized bootstrap estimate of the *b*-value; *SE* = standard error; p_{boot} = bootstrap *p*-value for unstandardized regression coefficient based on bias-corrected and accelerated bootstrapping with 10,000 replications.

[a]Gender is dummy coded: 0 = male, 1 = female.

[b]Previous applications is dummy coded: 0 = no, 1 = yes.

Table S6

Regression of Language Skills on Control Variables and UMS Achievement

	Language skills				
Predictors	ΔR^2	*b*	*SE*	β	p_{boot}
Step 1	.055				
Age		0.16	0.20	0.06	.464
Gender[a]		1.52	1.68	0.08	.368
Goal attainability		0.52	0.77	0.06	.447
Goal desirability		0.08	0.84	0.08	.922
General self-efficacy		-0.23	0.14	-0.16	.144
Previous applications[b]		-1.84	1.50	-0.10	.233
UMS affiliation		0.39	1.14	0.03	.736
UMS fear		0.29	1.15	0.02	.806
UMS power		1.60	0.93	0.14	.102
Step 2	.000				
UMS achievement		0.21	1.24	0.02	.875
Total R^2	.055				

Note. $N = 167$[c]. *b* = unstandardized bootstrap estimate of the *b*-value; *SE* = standard error; p_{boot} = bootstrap *p*-value for unstandardized regression coefficient based on bias-corrected and accelerated bootstrapping with 10,000 replications.

[a]Gender is dummy coded: 0 = male, 1 = female.

[b]Previous applications is dummy coded: 0 = no, 1 = yes.

[c]For one participant, there was no value for language skills due to circumstances of measurement at the police department.

Table S7

Regression of Physical Ability on Control Variables and UMS Achievement

	Physical ability				
Predictors	ΔR^2	*b*	*SE*	β	p_{boot}
Step 1	.209				
Age		-0.07	0.10	-0.06	.494
Gender[a]		-3.61	0.88	-0.40	> .001
Goal attainability		0.04	0.38	0.01	.922
Goal desirability		-0.51	0.40	-0.12	.173
General self-efficacy		-0.10	0.07	-0.17	.106
Previous applications[b]		-0.20	0.74	-0.03	.800
UMS affiliation		-0.36	0.54	-0.06	.563
UMS fear		-0.31	0.58	-0.06	.566
UMS power		-0.21	0.47	-0.04	.626
Step 2	.000				
UMS achievement		0.00	0.64	0.01	.993
Total R^2	.209				

Note. $N = 113$. *b* = unstandardized bootstrap estimate of the *b*-value; *SE* = standard error; p_{boot} = bootstrap *p*-value for unstandardized regression coefficient based on bias-corrected and accelerated bootstrapping with 10,000 replications.

[a]Gender is dummy coded: 0 = male, 1 = female.

[b]Previous applications is dummy coded: 0 = no, 1 = yes.

Table S8

Regression of Interview Performance on Control Variables and UMS Achievement

	Interview performance				
Predictors	ΔR^2	*b*	*SE*	β	p_{boot}
Step 1	.138				
Age		0.03	0.01	0.24	.017
Gender[a]		0.14	0.11	0.14	.161
Goal attainability		0.03	0.05	0.08	.439
Goal desirability		-0.05	0.05	-0.11	.279
General self-efficacy		0.01	0.01	0.14	.304
Previous applications[b]		-0.02	0.09	-0.02	.860
UMS affiliation		0.10	0.06	0.16	.171
UMS fear		0.02	0.07	0.03	.789
UMS power		-0.03	0.06	-0.05	.595
Step 2	.004				
UMS achievement		0.05	0.08	0.08	.502
Total R^2	.143				

Note. $N = 100$. *b* = unstandardized bootstrap estimate of the *b*-value; *SE* = standard error; p_{boot} = bootstrap *p*-value for unstandardized regression coefficient based on bias-corrected and accelerated bootstrapping with 10,000 replications.

[a]Gender is dummy coded: 0 = male, 1 = female.

[b]Previous applications is dummy coded: 0 = no, 1 = yes.

Table S9

Regression of Number of Recommendations on Control Variables and UMS Achievement

Predictors	Number of recommendations				
	ΔR^2	*b*	*SE*	β	p_{boot}
Step 1	.134				
Age		0.05	0.04	0.13	.209
Gender[a]		0.60	0.39	0.17	.087
Goal attainability		0.19	0.16	0.13	.204
Goal desirability		-0.10	0.16	-0.07	.456
General self-efficacy		0.03	0.03	0.14	.279
Previous applications[b]		-0.51	0.31	-0.17	.101
UMS affiliation		0.24	0.22	0.12	.302
UMS fear		0.08	0.23	0.04	.732
UMS power		-0.08	0.19	-0.04	.688
Step 2	.013				
UMS achievement		0.31	0.27	0.13	.202
Total R^2	.147				

Note. $N = 100$. *b* = unstandardized bootstrap estimate of the *b*-value; *SE* = standard error; p_{boot} = bootstrap *p*-value for unstandardized regression coefficient based on bias-corrected and accelerated bootstrapping with 10,000 replications.

[a]Gender is dummy coded: 0 = male, 1 = female.

[b]Previous applications is dummy coded: 0 = no, 1 = yes.

Ancillary Analysis

Previous literature (e.g., Sheldon & Cooper, 2008) suggested that the effect of the achievement motive on performance might be mediated by autonomous motivation. Therefore, we performed a mediation analysis using the computational tool PROCESS (version 2.15; Hayes, 2013) with UMS achievement as the independent variable, success as the dependent variable, and autonomous motivation as the mediator. Controlled motivation was used in addition to the control variables used above.

Autonomous and controlled motivation of the goal of becoming a police officer were assessed using a four-item scale introduced by Sheldon and Elliot (1999). Items were adapted to the nomothetic goal (e.g., “I pursue my goal of becoming a police officer because I believe it is an important and meaningful profession.”) and were answered on a scale ranging from 1 (*no agreement*) to 9 (*very much agreement*). Autonomous motivation was calculated as the

mean of the items on intrinsic and identified motivation (ρ = .54) and controlled motivation as the mean of the items on introjected and external motivation (ρ = .43).

Results showed that there were significant effects of UMS achievement on autonomous motivation (a = 0.207, p = .007) and of autonomous motivation on success (b = 1.396, p = .007). Above that, there was an indirect effect of UMS achievement on success via autonomous motivation (ab = 0.288), the 95% bootstrap confidence interval being entirely above zero (0.046 to 0.652). Conversely, the direct effect of UMS achievement was no longer significant (c' = 0.582, p = .131). In sum, our test of a mediation effect was significant.

The results imply that when individuals with a high explicit achievement motive pursue a goal within an achievement-related context (selection process), they experience high autonomous motivation. Such high autonomous motivation is associated with high effort investment (e.g., Sheldon & Elliot, 1998), which may have had a small effect on the probability of success at each stage (i.e., applicants with a high achievement motive managed to be "just good enough" to pass a stage more frequently than applicants with a low achievement motive). This effect accumulated over the selection process and led to a higher probability of being successful and getting a job offer for a trainee position.

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