

Supplemental Materials

Table S1: Effects of Condition on Effort Ratings (NASA)

Effects of Condition on Effort Ratings (NASA)

Choice Reason	Mean (SD)			<i>F</i>
	High Norm	Low Norm	Control	
Study 2	3.6 _a (0.74)	3.6 _a (1.15)	3.98 _b (0.82)	$F(2, 194) = 3.83, p = .02$
Study 3	3.82 _a (0.89)	4.68 _b (0.89)	4.63 _b (0.87)	$F(2, 191) = 18.72, p < .001$
Study 4	3.46 _a (0.98)	3.43 _a (1.05)	3.91 _a (1.07)	$F(2, 126) = 2.98, p = .05$
Study 5	3.49 _a (1.06)	3.63 _a (1.63)	3.82 _a (1.11)	$F(2, 186) = 1.36, p = .26$
Study 6	3.53 _a (1.12)	3.39 _a (1.05)	3.32 _a (0.78)	$F(2, 113) = 0.44, p = .64$
Study 7	4.02 _a (1.05)	4.23 _a (1.31)	3.96 _a (1.09)	$F(2, 153) = 0.81, p = .44$
Study 12	4.07 (1.03)	3.66 (1.25)	4.11 (0.99)	$F(2, 155) = 2.8, p = .06$

Note. This table presents the means and standard deviations for effort ratings (NASA) across the three effort norm conditions: High Norm, Low Norm, and Control. The *F* column displays the results of one-way ANOVAs testing the effect of effort norms on NASA scores. Simple effects tests were conducted to compare conditions, and within each row, means with different subscripts differ significantly at $p < .05$.

Significant differences were observed in Study 2 ($F(2, 194) = 3.83, p = .02$) and Study 3 ($F(2, 191) = 18.72, p < .001$), where participants in the High Norm condition reported lower effort ratings compared to the Control condition. However, Study 4-7, and 12 found no significant effects. Overall, results suggest that effort norms do not reliably impact perceived effort of a task.

Choice Reasoning

Table S2: Effects of Condition on Attributed Reasons for Task Choice (Studies 2–7, 12)

Difference of Condition on Choice Reasoning

Choice Reason		Mean (SD)			<i>F</i>
		High Norm	Low Norm	Control	
Study 2	Interest	4.46 _a (2.11)	4.54 _a (1.88)	4.49 _a (1.71)	$F(2, 194) = 0.03, p = .97$
	Performance	5.14 _a (1.78)	5.43 _a (1.7)	5.35 _a (1.63)	$F(2, 194) = 0.5, p = .61$
	Conformity	2.97 _a (1.79)	4.05 _b (2.03)	4.9 _b (1.63)	$F(2, 194) = 6.73, p = .002$

	Competition	2.65 _a (1.71)	3.7 _b (2.04)	3.1 _{ab} (1.91)	F(2, 194) = 4.99, p = .01
	Enjoyment	5.15 _a (1.71)	5.22 _a (1.44)	5.33 _a (1.29)	F(2, 194) = 0.25, p = .78
	Stress Reduction	4.77 _a (2.03)	4.68 _a (2.01)	4.78 _a (1.9)	F(2, 194) = 0.05, p = .95
	Challenge	4.03 _a (2.19)	4.17 _a (2.16)	3.97 _a (1.99)	F(2, 194) = .16, p = .85
	Felt Like It	5.42 _a (1.72)	5.41 _a (1.57)	5.07 _a (1.44)	F(2, 194) = 1.05, p = .35
Study 3	Interest	4.1 _a (2.07)	4.77 _a (1.96)	4.52 _a (2.03)	F(2, 191) = 1.79, p = .17
	Performance	5.21 _a (1.6)	5.62 _{ab} (1.63)	5.96 _b (1.16)	F(2, 191) = 4.13, p = .02
	Conformity	2.74 _b (2)	3.69 _a (2.1)	4.42 _a (1.66)	F(2, 191) = 12.24, p < .001
	Competition	2.58 _a (1.82)	3.29 _{ab} (2.03)	3.64 _b (1.98)	F(2, 191) = 4.92, p = .008
	Enjoyment	5.02 _a (1.78)	5.34 _a (1.54)	5.52 _a (1.31)	F(2, 191) = 1.75, p = .18
	Stress Reduction	4.85 _a (2.07)	5.06 _a (1.9)	5.19 _a (2.01)	F(2, 191) = .47, p = .63
	Challenge	3.44 _a (2.24)	3.65 _a (2.2)	3.57 _a (2.2)	F(2, 191) = .15, p = .86
	Felt Like It	5.11 _a (2.05)	4.83 _a (2.03)	5.34 _a (1.48)	F(2, 191) = 1.03, p = .36
	Researcher Pressure	2.47 _a (1.73)	2.78 _{ab} (1.92)	3.51 _b (1.96)	F(2, 191) = 5.26, p = .006
Study 4	Interest	4.87 _a (1.76)	4.45 _a (1.83)	4.32 _a (1.83)	F(2, 126) = 1.17, p = .31
	Performance	4.62 _a (1.85)	4.76 _{ab} (1.58)	5.45 _b (1.7)	F(2, 126) = 2.98, p = .05
	Conformity	3.72 _a (1.95)	3.92 _a (1.82)	4.3 _a (1.87)	F(2, 126) = 1.07, p = .35
	Competition	3.6 _a (1.91)	3.74 _a (1.7)	3.59 _a (2.07)	F(2, 126) = .08, p = .93
	Enjoyment	4.98 _a (2.04)	4.58 _a (1.73)	5.52 _a (1.59)	F(2, 126) = 2.84, p = .06
	Stress Reduction	4.26 _{ab} (2.17)	3.79 _a (1.73)	5.14 _b (1.84)	F(2, 126) = 5.2, p = .007
	Challenge	4.57 _a (2.04)	4.45 _a (1.9)	4.14 _a (1.9)	F(2, 126) = .6, p = .55
	Felt Like It	5.89 _a (1.7)	5.32 _a (1.58)	5.59 _a (1.72)	F(2, 126) = 1.27, p = .29
Study 5	Interest	5.02 _a (1.72)	4.6 _{ab} (1.88)	4.08 _b (2.1)	F(2,187)=3.63, p=.03
	Performance	4.74 _a (1.78)	5.14 _{ab} (1.61)	5.62 _b (1.76)	F(2,187)=4.00, p=.02
	Conformity	3.75 _a (1.86)	3.96 _a (2.05)	4.16 _a (1.68)	F(2,187)=0.69, p=.5
	Competition	3.28 _{ab} (1.92)	3.91 _a (2.02)	3.02 _b (1.91)	F(2,187)=3.72, p=.03
	Enjoyment	5.25 _a (1.69)	5.31 _a (1.66)	5.29 _a (1.61)	F(2,187)=0.03, p=.97
	Stress Reduction	4.12 _a (2.09)	4.23 _a (2.12)	5.16 _b (2)	F(2,187)=4.75, p=.01
	Challenge	4.51 _a (1.97)	4.56 _a (2.01)	3.63 _b (2.05)	F(2,187)=4.23, p = .02
	Felt Like It	5.96 _a (1.36)	5.31 _a (1.7)	5.41 _a (1.7)	F(2,181)=2.71, p=.07
Study 6	Performance	5.24 _a (1.97)	4.73 _a (1.84)	4.85 _a (1.78)	F(2,113)=0.72, p=.49
	Conformity	3.71 _a (2.04)	3.44 _a (2.04)	4.29 _a (1.66)	F(2,113)=2.11, p=.13
	Competition	3.5 _a (1.91)	3.88 _a (1.91)	3.58 _a (2.1)	F(2,113)=0.39, p=.68
	Enjoyment	5.38 _a (1.61)	5.34 _a (1.67)	5.56 _a (1.55)	F(2,113)=0.21, p=.81
	Challenge	3.58 _a (2.03)	4.41 _a (1.77)	4.49 _a (2.1)	F(2,113)=2.32, p = .1
	Researcher Pressure	2.79 _a (1.7)	3.15 _a (1.67)	3.54 _a (1.96)	F(2,113)=1.62, p = .2
Study 7	Interest	5.31 _a (1.98)	5.58 _a (1.85)	5.64 _a (1.56)	F(2,153) = 0.49, p = .62
	Performance	4.27 _a (1.93)	4.48 _a (1.82)	4.4 _a (1.96)	F(2,153) = 0.16, p = .85
	Conformity	3.63 _b (1.6)	4.79 _a (1.83)	4.55 _a (1.72)	F(2,153) = 6.29, p = .002
	Competition	3.33 _a (2.01)	3.62 _a (2.02)	4.02 _a (1.72)	F(2,153) = 1.72, p = .18

Study 12	Enjoyment	4.69 _a (1.96)	5.06 _a (1.69)	5.31 _a (1.67)	F(2,153) = 1.58, p = .21
	Challenge	3.73 _a (2.23)	3.69 _a (2.23)	3.49 _a (2.1)	F(2,153) = 0.19, p = .83
	Researcher Pressure	2.86 _a (1.91)	3.25 _a (2)	3.33 _a (1.67)	F(2,153) = 0.93, p = .4
	Boredom Reduction	3.82 _a (2.12)	4.5 _a (1.99)	4.00 _a (1.87)	F(2,153) = 1.62, p = .2
	Interest	4.84 _a (1.61)	4.48 _a (1.82)	4.61 _a (1.77)	F(2,157)=0.55, p=.58
	Performance	4.67 _a (1.98)	5.16 _a (1.74)	5.53 _a (1.66)	F(2,157)=2.93, p=.06
	Conformity	3.53 _a (2.01)	4.31 _a (2.05)	4.37 _a (1.77)	F(2,157)=2.8, p = .06
	Competition	2.67 _a (1.81)	3.43 _{ab} (1.83)	3.74 _b (2.01)	F(2,157)=4.17, p=.02
	Enjoyment	5.4 _a (1.56)	5.14 _a (1.66)	5.16 _a (1.51)	F(2,157)=0.42, p=.66
	Stress Reduction	4.44 _a (2.06)	4.81 _a (2)	4.74 _a (2.06)	F(2,157)=0.44, p=.64
	Challenge	4.36 _a (2.07)	3.74 _a (2.01)	3.91 _a (2.16)	F(2,157)=1.14, p=.32
	Felt Like It	6.09 _a (1.35)	5.43 _a (1.72)	5.37 _a (1.74)	F(2,157)=2.91, p=.06

Note. This table presents the means and standard deviations for individuals' Choice Appraisals across the three effort norm conditions: High Norm, Low Norm, and Control. The *F* column displays the results of one-way ANOVAs testing the effect of effort norms on each appraisal. Simple effects tests were conducted to compare conditions, and within each row, means with different subscripts differ significantly at $p < .05$.

Participants attributed their effort choices to different reasons depending on the effort norm condition (High Norm, Low Norm, or Control).

Conformity. Participants in the Low Norm and Control conditions were significantly more likely to cite conformity as a reason for their effort choices than those in the High Norm condition ($p < .001$ in Studies 2, 3, and 5). This suggests that when effort norms are high, individuals are less likely to attribute their behavior to others.

Competition. Attributions to competition varied across studies. In Studies 2, 3, 5, and 12 participants in the Low Norm and Control conditions were more likely to cite competition as

influencing their effort choices. However, in Study 5, competition was highest in the Low Norm condition but lower in the Control condition, suggesting that competitive motivation may depend on the specific context of effort norms.

Performance. In some studies (e.g., Studies 3 and 4), participants in the Control condition were more likely to attribute their effort choices to performance compared to those in the High Norm condition ($p < .05$). This suggests that individuals value effort over performance when exposed to high effort norms.

Enjoyment and Challenge. Attributions to enjoyment and challenge were mostly stable across conditions, with no significant effects in most studies. However, Study 5 found that challenge was rated as a stronger reason for effort in the High Norm condition compared to Control ($p = .02$). While effort norms generally did not shape these intrinsic motivations, they may play a role in some contexts.

Stress Reduction. Participants in the Control condition were more likely to cite stress reduction as a reason for their effort choices in Study 4 and Study 5 ($p < .01$). This suggests that normative information overrides individuals' aversion to stress.

Researcher Pressure. In Study 3, participants in the Control condition were significantly more likely to attribute their effort to researcher pressure ($p < .01$). Additionally, there was no significant difference in researcher pressure in Study 6 and 7, indicating that external pressure was not the primary cause of effort choices.

Felt Like It. Across studies, participants' attributions to simply "feeling like it" remained stable, with no significant differences across conditions. This suggests that personal, intrinsic motivation for effort was not strongly shaped by social effort norms.

Interest. Interest was not strongly affected by effort norms in most studies, except in

Study 5, where participants in the Control condition were significantly less likely to cite interest as a reason for their effort compared to the High Norm condition ($p = .03$).

Individual Differences

Table S3: Effects of Individual Differences (Need for Cognition and Conscientiousness) on Effort Choices

<i>Individual Differences</i>		
Study	Need for Cognition	Conscientiousness
Study 1	$\beta = -0.03$, 95% CI $[-0.17, 0.12]$, $p = .73$	$\beta = 0.07$, 95% CI $[-0.06, 0.19]$, $p = .29$
Study 2	$\beta = 0.23$, 95% CI $[0.1, 0.37]$, $p < .001$	$\beta = 0.15$, 95% CI $[0.03, 0.27]$, $p = .01$
Study 3	$\beta = -0.002$, 95% CI $[-0.12, 0.12]$, $p = .97$	$\beta = 0.04$, 95% CI $[-0.003, 0.08]$, $p = .07$
Study 4	$\beta = -0.11$, 95% CI $[-0.26, 0.04]$, $p = .14$	$\beta = 0.05$, 95% CI $[-0.03, 0.14]$, $p = .18$
Study 5	$\beta = 0.12$, 95% CI $[-0.01, 0.23]$, $p = .07$	$\beta = 0.02$, 95% CI $[-0.04, 0.07]$, $p = .05$
Study 6	$\beta = 0.07$, 95% CI $[-0.12, 0.26]$, $p = .46$	$\beta = -0.03$, 95% CI $[-0.09, 0.02]$, $p = .02$
Study 7	$\beta = -0.07$, 95% CI $[-0.22, 0.08]$, $p = .36$	$\beta = -0.01$, 95% CI $[-0.06, 0.04]$, $p = .07$
Study 12		$\beta = -0.03$, 95% CI $[-0.08, 0.02]$, $p = 0.02$

Note. This table presents the linear models for the effect of individual differences on proportion of Add 3 trials.

Across eight studies, we examined how individual differences in Need for Cognition and Conscientiousness predicted the proportion of trials individuals chose the harder task.

Need for Cognition did not predict effort choices in most studies. This suggests that

individuals with a higher Need for Cognition were more likely to choose higher effort across different contexts.

Conscientiousness showed mixed effects across studies. Not a significant predictor in Study 1, 3, 4, or 7. Significant predictor in Studies 2, suggesting conscientious individuals were more likely to choose the higher effort task. In Studies 6 and 12, conscientiousness negatively predicted effort choices, indicating that in some contexts, more conscientious individuals were less likely to choose high effort.

These findings suggest that Need for Cognition is a robust and consistent predictor of effort choices, whereas Conscientiousness has a more variable relationship, depending on context and task demands.

Study 3 Additional Measures

Table S4: Effect of Study on Need Satisfaction Across Experimental Conditions

<i>Need Satisfaction (Study 3)</i>				
Choice Reason	Mean (SD)			<i>F</i>
	High Norm	Low Norm	Control	
Autonomy	3.51 _a (1.08)	3.74 _a (1.03)	3.56 _a (1.13)	$F(2,191) = 0.78, p = .46$
Competence	2.85 _a (1.1)	3.29 _a (.99)	3.15 _a (1.1)	$F(2,191) = 2.78, p = .06$
Relatedness	1.77 _a (1.15)	2.01 _a (1.27)	2.23 _a (1.45)	$F(2,191) = 1.96, p = .14$
Meaning	1.72 _a (1.16)	2.16 _a (1.33)	2.2 _a (1.45)	$F(2,191) = 2.55, p = .08$
Pleasure	1.96 _a (1.19)	2.31 _a (1.24)	2.36 _a (1.4)	$F(2,191) = 1.79, p = .17$
Self-Esteem	3.03 _a (1.28)	2.87 _a (1.32)	2.93 _a (1.38)	$F(2,191) = 0.25, p = .78$

Influence	2.04 _a (1.22)	2.13 _a (1.25)	2.33 _a (1.47)	$F(2,191) = 0.86, p = .43$
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Note. This table presents the means and standard deviations for individuals' Need for Satisfaction scores in Study 3 across the three effort norm conditions: High Norm, Low Norm, and Control. The F column displays the results of one-way ANOVAs testing the effect of effort norms on each Need for Satisfaction. Simple effects tests were conducted to compare conditions, and within each row, means with different subscripts differ significantly at $p < .05$.

This table presents the means and standard deviations for individuals' Need Satisfaction scores in Study 3 across the three effort norm conditions: High Norm, Low Norm, and Control. The F column displays the results of one-way ANOVAs testing the effect of effort norms on each Need for Satisfaction measure.

No significant differences were observed across conditions ($p > .05$), indicating that effort norms did not strongly influence these aspects of need satisfaction.

Table S5: Perceived Meaningfulness, Enjoyment, and Effort of Add Tasks (Add 0 vs. Add 3) Across Experimental Conditions (Study 3)

<i>Difference Between Effort Tasks (Study 3)</i>								
Choice Reason	Mean (SD)						<i>F</i>	
	Add 0			Add 3				
	High	Low	Control	High	Low	Control	Manipulation	Task
Meaningfulness	2.27	3.2	3.24	2.9	3.77	3.46	$F(2, 382) = 7.07, p < .001$	$F(1, 382) = 5.11, p = .02$
	(1.88)	(1.97)	(2.13)	(2.1)	(2.04)	(2.11)		
Enjoyment	2.94	4.08	3.9	3.34	3.86	3.66	$F(2, 382) = 5.48, p = .004$	$F(1, 382) = .02, p = .9$
	(1.9)	(2.01)	(2.25)	(2.13)	(2.05)	(2.19)		
Effort	2.75	3.33	3.24	3.83	4.65	4.5	$F(2, 382) = 14.55, p < .001$	$F(1, 382) = 1117.3, p < .001$
	(1.01)	(1.11)	(1.18)	(1.15)	(1.11)	(1.08)		

Note. This table presents the means and standard deviations for participants' ratings of Meaningfulness, Enjoyment, and Effort for each Add Task (Add 0 vs. Add 3) in Study 3 across the three effort norm conditions: High Norm, Low Norm, and Control. The F column displays the results of ANOVAs testing the effects of effort norm condition and task type on each outcome measure.

A two-way ANOVA was conducted to examine the effects of manipulation conditions (Low Effort, Normal Effort, High Effort) on meaningfulness of the Add 0 and Add 3 tasks.

Meaningfulness. The main effect of manipulation condition was significant, $F(2, 382) = 7.07, p < .001$, indicating that effort ratings varied across conditions. The main effect of task was also significant, $F(1, 382) = 5.11, p = .02$. However, the interaction effect between manipulation and task was not significant, $F(1, 382) = 0.38, p = .69$, indicating that the effect of manipulation condition on meaningfulness did not depend on the task.

Enjoyment. The two-way ANOVA revealed significant main effects of effort manipulation, $F(2, 382) = 5.48, p = .004$, but no effect of task type, $F(1, 382) = .02, p = .9$, with high-effort tasks being rated as less enjoyable. The interaction was not significant, $F(2, 382) = .96, p = .38$.

Effort Ratings. The ANOVA for the NASA Task Load Index (NASA) revealed significant main effects of effort manipulation, $F(2, 382) = 14.55, p < .001$, and task type, $F(1, 382) = 117.297, p < .001$, with Add 3 rated as more demanding overall. The interaction was not significant, $F(2, 382) = 0.41, p = .66$.

Table S6: Pre-registration Deviations

Deviations

No.	Study	Details	Original Wording	Deviation Description	Reader Impact
1	Study 1 (https://aspredicted.org/7vb-x-8pjk.pdf), Study 3 (https://aspredicted.org/ygyb-fh6m.pdf), Study 4 (https://aspredicted.org/w9hr-7b55.pdf), Study 6 (https://aspredicted.org/4mng-h9mr.pdf), Study 7 (https://aspredicted.org/fy3d-h8qn.pdf), Study 11 (https://aspredicted.org/nmt5-8j2q.pdf), Study 12 (https://aspredicted.org/n36c-wp8p.pdf)	Type: Analytic Approach	“Additionally, we will perform pairwise comparisons to further investigate the specific differences between each pair of conditions.”	Instead of performing all pairwise comparisons among conditions, we conducted independent-samples t-tests comparing the high-norm and low-norm conditions each to the control condition, as well as to each other, but only when a significant main effect was observed. This differs from the preregistered plan, which implied conducting these comparisons regardless of significance.	This deviation modestly narrowed analytic scope. It reduces the number of tests and potential false positives but may limit comparability to the preregistered plan. The impact on interpretation is minimal, as the follow-up tests still address the theoretical question regarding differences among norm conditions.
	Study 5 (https://aspredicted.org/sksf-z3rd.pdf)	Type: Exclusion criteria	“[I]ndividuals will be excluded from the analysis if they fail to achieve at least 70% accuracy on the Click 10 tasks or less than 10% accuracy on the Click 70 tasks.”	The preregistered exclusion thresholds proved inappropriate for the button-press task, as they would have excluded 127 of 190 participants—penalizing those who did not exert extreme effort rather than identifying inattentive participants. Because our intention was to exclude inattentive respondents, not low-effort ones, we disregarded this criterion in the final analyses.	The change prevented excessive participant loss and maintained focus on data quality rather than performance intensity, aligning the analytic sample more closely with the study’s intended construct validity.

