Replication of a Research Claim from Fritz et al. (2010), from the Journal of Organizational Behavior - Direct Replication - k17

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OSF Project: https://osf.io/s5v28
Preregistration: https://osf.io/b6wg3

Claim Summary: Fritz, Sonnentag, Spector and McInroe (2010) examined the effect of recovery experiences during the weekend on the affective states during the following week. In a longitudinal study, affective states were assessed at three timepoints: at the end of the week, the end of the weekend, and at the end of the following week. Recovery experiences were assessed during the second (weekend) timepoint. In the first hypothesis test of the study, Fritz et al (2010) tested the relationship between relaxation experiences during the weekend and joviality at the end of the following week, controlling for joviality at the end of the previous week and sociodemographic variables. In a multiple regression, Fritz et al. found a positive relationship between relaxation experiences and joviality (standardized regression coefficient $\beta = 0.15$, $p < 0.01$). The claim extracted for replication is: Relaxation at Time 2 (Sunday evening) will positively predict joviality at Time 3 (the following Friday) in a regression analysis controlling for joviality at Time 1 (the previous Friday), other recovery experiences, non-work hassles, and demographic characteristics (gender, age, education, having children, work hours per week, workdays per week).

Replication Criteria: Criterion for a successful replication for the focal test is a statistically significant positive effect (alpha = .05, one-tailed) of relaxation at Time 2 on joviality at Time 3 in the identically specified regression model.

Replication Result: Controlling for joviality scores at Time 1 and participant's sociodemographic characteristics, relaxation scores at Time 2 were related to joviality at Time 3: standardized regression coefficient $\beta = 0.098$, unstandardized regression coefficient $b = .072$, one-sided $p = 0.043$, $t = 1.73$. We interpret this result as a replication of the original effect. For the requirements of the SCORE project, all replication results should be assessed with two-tailed tests, regardless of the directionality of predictions. Therefore, for the purposes of the project, the claim is considered not replicated: $\beta = 0.098$, $b = .072$, two-sided $p = .085$, $t = 1.73$.

Deviations from the Original Study: In the original study, data was collected using paper and pencil questionnaires. Our study used an online questionnaire.

Deviations from the Preregistration: The study deviated from preregistration in the recruitment method. We initially planned to contact kindergarten administrators to ask them to participate in the study. After agreeing, the administrators would have been asked to estimate the number of respondents in the organization and provide the emails of the employees who would potentially be interested in participating. We would then have contacted the employees with a recruitment letter. Additionally, this strategy would have been complemented with snowballing. Due to low response rates from the administrators, we changed the recruitment method to contacting kindergarten administrators and asking them to forward the email containing the link to the study (consent form) to the employees at their organization.

The preregistered data processing script (k17_data_preparation_preregistration.R) contained one mistake that was corrected: in the original file, the columns containing PANAS-X items were renamed incorrectly (section "updating column names"), mismatching the items and the subscales. The renaming section was corrected so that the items match the subscales.

The preregistered data processing script was changed in five instances: 1) the data loading part was added to refer to the raw data; 2) a new variable "Wave" was created to indicate the week of data collection (section "identifying participants present in all waves" in the k17_data_preparation_final.R script file; 3) a new variable "Age" was created by subtracting participants' birth year from 2021; 4) the code was added to account for participant attrition across the time points and to remove participants who completed study more than once (sections "identifying participants present in all waves", "selecting participants who completed the questionnaire", "adding the number of the data collection wave to data files", "Combining into one dataset", and "Removing participants who completed the study more than once, keeping the first instance" in the k17_data_preparation_final.R script file).

One change was made to the preregistered analysis script (k17_analysis_preregistration.R): the scaling of predictors and the outcome variable to obtain standardized (as opposed to unstandardized) regression coefficients.

The replication was conducted during the COVID-19 pandemic, with data collection taking place in summer-fall 2021. The data collection period was interrupted by mandated closures of educational institutions, including kindergartens, and summer holidays. The data was collected from institutions that were open or open with restrictions at the time of data collection. However, the COVID-19 pandemic could have affected the baseline affective states, work- and home-related hassles, quality of weekend experiences, and the psychological separation between the work week and the weekend among the kindergarten teachers. The unique context of the COVID-19 pandemic needs to be taken into account when interpreting the results of this replication.

Description of Materials Provided:

1) **The complete materials.** The materials, including Qualtrics questionnaires for the informed consent form, the three data collection questionnaires, and the reimbursement questionnaire, are provided at the project's OSF repository https://osf.io/s5v28, folder Methods and Materials/Questionnaire. The files are provided in the Qualtrics Survey Format.

   1_materials_consent_form_k17.qsf – the consent form
   2_materials_t1_questionnaire_k17.qsf – Time 1 questionnaire
   3_materials_t2_questionnaire_k17.qsf – Time 2 questionnaire
   4_materials_t3_questionnaire_k17.qsf – Time 3 questionnaire
   5_materials_reimbursement_form_k17.qsf – Reimbursement form.

2) **The raw data files.** The files were downloaded from the Qualtrics platform and anonymized by removing all identifying information except for the email addresses, which were used to match the participants' responses across the waves of data collection. The email addresses were anonymized by hashing using the SHA256 algorithm. The files are available in the Data/Raw data folder of the OSF repository.

   k17_t1_data.csv – Raw Time 1 data

k17_t2_data.csv – Raw Time 2 data
k17_t3_data.csv – Raw Time 3 data

3) **Data processing script.** The script uses the raw data and produces a joint longitudinal dataset with calculated indices. The script is located in the Analysis folder of the OSF repository.

   k17_data_preparation_final.R

4) **Processed data.** The data produced by the script k17_data_preparation_final.R. This file is used for analysis. The file is located in the Data folder of the OSF repository.

   k17_processed_data.csv

5) **Data dictionary.** The data dictionary describing k17_processed_data.csv, all variables in the file, their names, descriptions, data types, and allowed values. The file is located in the Data folder of the OSF repository.

   k17_data_dictionary.csv

6) **Analysis script.** The script uses the processed data file and runs the preregistered analyses: the hierarchical regression models, the focal hypothesis test, and the exploratory analyses. The script is located in the Analysis folder of the OSF repository.

   k17_analysis.R

7) **Analysis output.** The text file contains R output of the script k17_analysis.R

   k17_analysis_output.txt

Table 1. Hierarchical regression of joviality on weekend experiences

	Joviality (Time 3)	
Variable	*ß*	ΔR^2
Step 1—Control variables:		.01
Age	-.04	
Gender	-.11	
Having children	-.03	
Contract working hours per week	.02	
Days worked per week	-.02	
Step 2—Joviality (time 1)	.50***	.34***
Step 3—Weekend experiences		.05***
Detachment	.07	
Mastery	.11*	
Relaxation	.10	
Control	.03	
Hassles	-.06	
Total R^2		.39***

Gender: 1 = male, 2 = female. Two-sided *p* values are presented, as only one directional hypothesis was tested in the replication. *$p < 0.05$; **$p < .01$; ***$p < .001$.

Citation: Fritz, C., Sonnentag, S., Spector, P. E., & McInroe, J. A. (2010). The weekend matters: Relationships between stress recovery and affective experiences. *Journal of Organizational Behavior, 31*(8), 1137-1162.