***Online Supplements for:***

**On the global and specific nature of psychological need satisfaction and work motivation in predicting employees’ wellbeing: A self-determination theory perspective**

These online supplements are to be posted on the journal website and hot-linked to the manuscript. If the journal does not offer this possibility, these materials can alternatively be posted on one of our personal websites (we will adjust the in-text reference upon acceptance).

We would also be happy to have some of these materials brought back into the main manuscript, or included as published appendices if you deem it useful. We developed these materials to provide additional technical information and to keep the main manuscript from becoming needlessly long.

**Appendix 1**

**Preliminary Measurement Models**

**Analyses**

Following recent recommendations (e.g., Howard et al., 2018, 2020; Tóth-Király et al., 2018), we relied on the bifactor exploratory structural equation modeling (bifactor-ESEM) analyses (Morin et al., 2016, 2020) to examine the underlying factor structure of the work motivation and need satisfaction measures. In doing so, we contrasted four alternative measurement models for both measures: (a) correlated factors confirmatory factor analytic (CFA) solutions, where factors were only defined by their *a priori* indicators; (b) correlated factors ESEM solutions, where factors where defined as in the CFA solutions, but in which all cross-loadings were freely estimated but targeted to be as close to zero as possible (using confirmatory target rotation procedures); (c) bifactor-CFA solutions, defined as the CFA solutions, but also incorporating a global factor (G-factor) defined by all indicators and assuming the orthogonality of the specific factors (S-factors); (d) bifactor-ESEM solutions, defined as the bifactor-CFA solutions, but allowing all cross-loadings to be freely estimated between the S-factors (targeted to be as close to zero as possible, using confirmatory target rotation procedures). The measurement model underpinning the outcomes was estimated using CFA (with no cross-loadings and no global factor) including three correlated factors representing burnout, work satisfaction, and turnover intentions. In this model, *a priori* correlated uniquenesses were added between three (out of seven) turnover intentions items to control for the methodological artefact associated with their parallel wording (Morin et al., 2020).

As noted by Morin et al. (2016, 2017, 2020), the comparison of the four alternative measurement models (i.e., correlated factors CFA and ESEM, bifactor-CFA and ESEM) for work motivation and need satisfaction needs to consider both their model fit, but also their parameter estimates. Following the guidelines outlined by these authors, we first compared the correlated factors CFA and ESEM solutions. In this comparison, apart from satisfactory model fit and the identification of well-defined factors (i.e., associated with strong target loadings), the critical comparison pertains to the presence cross-loadings and the magnitude of factor correlations. The correlated factors ESEM solution should be preferred to the CFA solution when multiple cross-loadings are present in this solution (although the presence of multiple cross-loadings might indicate the need to incorporate a G-factor) and when factor correlations are reduced in the ESEM, relative to CFA, solution (Asparouhov et al., 2015; Morin et al., 2020). The retained correlated factors CFA or ESEM solution was then be contrasted with its bifactor counterpart. In this second comparison, the bifactor representation can be considered to be supported when it results in equal or improved model fit, in a well-defined global factor, and in at least some well-defined S-factors.

**Results**

***Measurement Models: Work Motivation***

The fit of the alternative measurement models is reported in Table S1 of the online supplements, while parameter estimates for these models are reported in Tables S2 to S4 of the online supplements. For work motivation, the correlated factors and bifactor-CFA solutions both failed to achieve an acceptable level of fit according to all three fit indices. In contrast, the correlated factors and bifactor-ESEM solutions both demonstrated an excellent level of fit to the data. Among these two models, the bifactor-ESEM model demonstrated a higher level of fit to the data (ΔCFI = +.004; ΔTLI = +.007; ΔRMSEA = -.010).

The correlated factors ESEM solution revealed well-defined and reliable factors for intrinsic (λ = .793 to .840, *M* = .816; ω = .897), introjected (λ = .356 to .850, *M* = .593; ω = .789), external-material (λ = .173 to .733, *M* = .495; ω = .612), external-social (λ = .729 to .740, *M* = .735; ω = .817), and amotivation (λ = .697 to .913, *M* = .771; ω = .862). However, the identified regulation factor appeared to be weakly defined (λ = .188 to .355, *M* = .271; ω = .321) and demonstrated substantial cross-loadings on the other motivational factors, suggesting that these items may better tap into employees’ global levels of self-determination than into their specific levels of identified regulation. Additionally, two introjected items and one external-material item demonstrated cross-loadings higher than their target loadings on the other factors. The presence of multiple statistically significant cross-loadings (35 out of 95 cross-loadings) suggests the presence of an unmodelled self-determination G-factor. Finally, the factor correlations were meaningfully reduced in ESEM (|*r*| = .027 to .595, *r* = .225) compared to CFA (|*r*| = .012 to .898, *r* = .409), providing further support for the ESEM solution.

The ESEM solution was thus retained and contrasted with its bifactor counterpart. Parameter estimates revealed a reliable work-related self-determination G-factor which was well-defined by most indicators (λ = -.722 to .793, *M* = .427; ω = .910). Matching SDT’s continuum hypothesis, these loadings were strong and positive for intrinsic motivation (λ = .779 to .793, *M* = .787), moderate and positive for identified regulation (λ = .509 to .691, *M* = .596), weak and positive for introjected regulation (λ = -.046 to .652, *M* = .274), weak and negative for external-material (λ = -005. to -.291, *M* = .156) and external-social (λ = -.340 to .044, *M* = .172) regulation, and strong and negative for amotivation (λ = -.582 to -.722, *M* = .631). When looking at the S-factors, the introjected (λ = .355 to .818, *M* = .581; ω = .785), external-material (λ = .170 to .843, *M* = .533; ω = .658), external-social (λ = .700 to .773, *M* = .724; ω = .828), and amotivation (λ = .457 to .617, *M* = .523; ω = .747) S-factors were all well-defined and retained a higher amount of specificity, whereas the intrinsic (λ = .348 to .395, *M* = .373; ω = .647) and especially identified (λ = .113 to .432, *M* = .280; ω = .360) S-factors seemed to retain less specificity once the variance explained by the G-factor was taken into account. However, it is important to keep in mind that these S-factors, being based on latent variable models, remain perfectly reliable, and only reflect the specificity in these subscales left unexplained by the G-factor, rather than providing a complete picture of intrinsic motivation and identified regulation. Together, these results support the value of a bifactor-ESEM representation of work motivation, which was retained for further analyses.

***Measurement Models: Need Satisfaction***

For need satisfaction, as shown in Table S1, the correlated factors CFA solution presented good fit to the data according to CFI and TLI (but not RMSEA), whereas the correlated factors ESEM, bifactor-CFA, and bifactor-ESEM solutions all had excellent fit to the data. Among these three solutions, the bifactor-ESEM model demonstrated the highest level of fit.

Parameter estimates associated with these need satisfaction measurement models are reported in Tables S5 to S7 in the online supplements. These estimates revealed well-defined and reliable factors of autonomy (λ = .220 to .799, *M* = .598; ω = .720), competence (λ = .651 to .917, *M* = .809; ω = .891), and relatedness (λ = .639 to .793, *M* = .740; ω = .805) satisfaction in the correlated factors ESEM solution. However, 9 out of the 20 cross-loadings were statistically significant and one autonomy satisfaction item had cross-loadings higher than its target loading, suggesting the presence of an unmodelled G-factor. In addition, the ESEM solution (*r* = .495 to .588, *r* = .534) resulted in reduced factor correlations relative to the CFA solution (*r* = .523 to .780, *r* = .651), supporting its value.

The ESEM solution was thus retained and compared to its bifactor counterpart. The bifactor-ESEM solution revealed a well-defined and reliable need satisfaction G-factor (λ = .454 to .853, *M* = .602; ω = .920), accompanied by a competence satisfaction S-factor retaining a high amount of specificity (λ = .526 to .718, *M* = .645; ω = .843), an autonomy satisfaction S-factor retaining a moderate amount of specificity (λ = .111 to .828, *M* = .435; ω = .630), and a relatedness satisfaction S-factor retaining a lower amount of specificity (λ = .024 to .555, *M* = .206; ω = .292), which frequently happens in bifactor solutions (Morin et al., 2020). The bifactor-ESEM solution was thus retained for further analyses.

***Measurement Models: Outcomes***

Finally, the CFA measurement model underpinning the multi-item outcome measures (emotional exhaustion, work satisfaction, turnover intentions) resulted in an excellent level of fit to the data (see Table S1). Parameter estimates, reported in Table S8 of the online supplements, revealed well-defined and reliable factors for emotional exhaustion (λ = .798 to .910, *M* = .868; ω = .939), work satisfaction (λ = .760 to .888, *M* = .820; ω = .911), and turnover intentions (λ = .579 to .944, *M* = .770; ω = .731).

**References used in these online supplements**

Asparouhov, T., Muthén, B., & Morin, A.J.S. (2015). Bayesian structural equation modeling with cross-loadings and residual covariances. *Journal of Management, 41*, 1561-1577.

Howard, J.L., Gagné, M., & Morin, A.J.S. (2020). Putting the pieces together: reviewing the structural conceptualization of motivation within SDT. *Motivation and Emotion, 44,* 846-886.

Howard, J.L., Gagné, M., Morin, A.J.S., & Forest, J. (2018). Using bifactor exploratory structural equation modeling to test for a continuum structure of motivation. *Journal of Management*, *44*, 2638-2664.

Morin, A.J.S., Arens, A.K., & Marsh, H.W. (2016). A bifactor exploratory structural equation modeling framework for the identification of distinct sources of construct-relevant psychometric multidimensionality. *Structural Equation Modeling*, *23*, 116-139.

Morin, A.J.S., Boudrias, J.-S., Marsh, H.W., McInerney, D.M., Dagenais-Desmarais, V., Madore, I., & Litalien, D. (2017). Complementary variable- and person-centered approaches to the dimensionality of psychometric constructs: Application to psychological wellbeing at work. *Journal of Business and Psychology, 32*, 395-419.

Morin, A.J.S., Myers, N.D., & Lee, S. (2020). Modern factor analytic techniques: Bifactor models, exploratory structural equation modeling (ESEM) and bifactor-ESEM. In G. Tenenbaum & R.C. Eklund (Eds.), *Handbook of Sport Psychology* (4th ed.). London, UK: Wiley.

Tóth-Király, I., Morin, A.J.S., Bőthe, B., Orosz, G., & Rigó, A. (2018). Investigating the multidimensionality of need fulfillment: A bifactor exploratory structural equation modeling representation. *Structural Equation Modeling*, *25*, 267-286.

**Table S1**

*Goodness-of-Fit Results from the Measurement Models Estimated in the Present Study*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Models | χ2 | df | CFI | TLI | RMSEA [90% CI] |
| *Work motivation* |  |  |  |  |  |
| First-order CFA | 1686.161\* | 137 | .881 | .851 | .127 [.121, .132] |
| First-order ESEM | 172.185\* | 72 | .992 | .982 | .044 [.036, .053] |
| Bifactor CFA | 2377.531\* | 133 | .827 | .778 | .155 [.149, .160] |
| Bifactor ESEM | 108.037\* | 59 | .996 | .989 | .034 [.024, .044] |
| *Need satisfaction* |  |  |  |  |  |
| First-order CFA | 221.402\* | 32 | .967 | .954 | .099 [.086, .111] |
| First-order ESEM | 55.897\* | 18 | .993 | .984 | .059 [.042, .077] |
| Bifactor CFA | 67.505\* | 25 | .993 | .987 | .053 [.038, .068] |
| Bifactor ESEM | 21.960\* | 11 | .998 | .992 | .040 [.014, .065] |
| Outcomes | 382.537\* | 113 | .986 | .983 | .062 [.055, .069] |
| *Predictive models* |  |  |  |  |  |
| Partial mediation | 0 | 0 | 1 | 1 | 0 [.000, .000] |
| Full mediation | 132.338\* | 12 | .907 | .342 | .119 [.101, .138] |

*Note*. \**p* < .01; CFA: Confirmatory factor analyses; ESEM: exploratory structural equation model; χ2: WLSMV chi-square; df: Degrees of freedom; CFI: Comparative fit index; TLI: Tucker-Lewis index; RMSEA: Root mean square error of approximation; 90% CI: RMSEA 90% confidence interval.

**Table S2**

*Standardized Parameter Estimates from the Six-Factor CFA and ESEM Solutions for the Work Motivation Scale*

|  |  |  |
| --- | --- | --- |
|  | CFA | ESEM |
|  | Factor (λ) | δ | IM (λ) | ID (λ) | IN (λ) | EM (λ) | ES (λ) | AM (λ) | δ |
| Intrinsic (IM) |  |  |  |  |  |  |  |  |  |
| Item 3 | .867\*\* | .249 | **.815\*\*** | .035 | .000 | -.009 | .026 | -.068\* | .248 |
| Item 7 | .893\*\* | .203 | **.840\*\*** | .027 | .056\* | .036 | -.057\* | -.022 | .196 |
| Item 14 | .870\*\* | .244 | **.793\*\*** | -.002 | .019 | .023 | -.034 | -.102\*\* | .242 |
| ω | .909 |  | .897 |  |  |  |  |  |  |
| Identified (ID) |  |  |  |  |  |  |  |  |  |
| Item 5 | .762\*\* | .419 | .447\*\* | **.188\*** | -.002 | .207\*\* | -.062 | -.261\*\* | .409 |
| Item 11 | .622\*\* | .613 | .017 | **.269\*\*** | .480\*\* | .079 | .039 | -.299\*\* | .476 |
| Item 17 | .639\*\* | .592 | .031 | **.355\*\*** | .246\*\* | .269\*\* | -.093 | -.375\*\* | .511 |
| ω | .716 |  |  | .321 |  |  |  |  |  |
| Introjected (IN) |  |  |  |  |  |  |  |  |  |
| Item 2 | .561\*\* | .685 | .080 | .445\*\* | **.356\*\*** | -.168\* | .295\*\* | .213\*\* | .446 |
| Item 8 | .888\*\* | .212 | .446\*\* | .298\*\* | **.378\*\*** | -.120\* | .026 | .063 | .391 |
| Item 10 | .633\*\* | .599 | -.124\* | -.004 | **.850\*\*** | .029 | -.054 | -.053 | .336 |
| Item 16 | .580\*\* | .663 | -.005 | -.114\* | **.789\*\*** | -.027 | .079 | .152\*\* | .335 |
| ω | .766 |  |  |  | .789 |  |  |  |  |
| External-material (EM) |  |  |  |  |  |  |  |  |  |
| Item 6 | .693\*\* | .520 | .091 | -.331\*\* | .158\*\* | **.173\*** | .418\*\* | .084 | .578 |
| Item 9 | .609\*\* | .629 | -.020 | .121 | -.069 | **.733\*\*** | -.003 | .229\*\* | .334 |
| Item 13 | .578\*\* | .666 | .095 | .155\* | -.137\*\* | **.580\*\*** | .224\*\* | .112 | .490 |
| ω | .661 |  |  |  |  | .612 |  |  |  |
| External-social (ES) |  |  |  |  |  |  |  |  |  |
| Item 1 | .672\*\* | .549 | -.058 | .267\*\* | -.040 | .027 | **.736\*\*** | -.061 | .399 |
| Item 12 | .799\*\* | .361 | -.020 | -.228\*\* | .080\* | .138\* | **.729\*\*** | -.017 | .308 |
| Item 19 | .798\*\* | .362 | -.004 | -.021 | .099\*\* | .034 | **.740\*\*** | -.020 | .380 |
| ω | .802 |  |  |  |  |  | .817 |  |  |
| Amotivation (AM) |  |  |  |  |  |  |  |  |  |
| Item 4 | .777\*\* | .397 | -.007 | -.104 | -.031 | -.047 | .066 | **.697\*\*** | .447 |
| Item 15 | .966\*\* | .066 | -.210\*\* | -.031 | .035 | .107\* | .077 | **.704\*\*** | .186 |
| Item 18 | .755\*\* | .430 | .077 | -.049 | .082 | .112\* | -.123\*\* | **.913\*\*** | .221 |
| ω | .875 |  |  |  |  |  |  | .862 |  |

*Note*. \**p* < .05; \*\**p* < .01; CFA: Confirmatory factor analysis; ESEM: Exploratory structural equation modeling; λ: Factor loading; δ: Item uniqueness; ω: model-based omega composite reliability based on McDonald (1970); Target factor loadings are in bold.

**Table S3**

*Latent Factor Correlations from the First-order CFA (below the diagonal) and ESEM (above the diagonal) Solutions for the Work Motivation Scale*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Intrinsic | Identified | Introjected | External – Material  | External – Social | Amotivation |
| Intrinsic motivation | — | .450\*\* | .236\*\* | .126 | -.193\*\* | -.595\*\* |
| Identified regulation | .898\*\* | — | .131\*\* | -.027 | .031 | -.222\*\* |
| Introjected regulation | .524\*\* | .673\*\* | — | .107 | .376\*\* | -.122 |
| External regulation – Material | -.066 | -.012 | .196\*\* | — | .250\*\* | .251\*\* |
| External regulation – Social | -.191\*\* | .030 | .495\*\* | .691\*\* | — | .260\*\* |
| Amotivation | -.670\*\* | -.676\*\* | -.234\*\* | .486\*\* | .299\*\* | — |

*Note.* \* *p* < .05; \*\* *p* < .01; CFA: Confirmatory factor analysis; ESEM: Exploratory structural equation modeling.

**Table S4**

*Standardized Parameter Estimates from the Bifactor ESEM Solution for the Work Motivation Scale*

|  |  |  |
| --- | --- | --- |
|  | Bifactor-CFA | Bifactor-ESEM |
|  | G (λ) | S (λ) | δ | SDT (λ) | IM (λ) | ID (λ) | IN (λ) | EM (λ) | ES (λ) | AM (λ) | δ |
| Intrinsic (IM) |  |  |  |  |  |  |  |  |  |  |  |
| Item 3 | .781\*\* | -.372\*\* | .251 | **.788\*\*** | **.348\*\*** | .001 | .020 | .089\* | .023 | -.010 | .249 |
| Item 7 | .802\*\* | -.384\*\* | .209 | **.793\*\*** | **.395\*\*** | .051\* | .048 | .103\* | -.021 | .031 | .198 |
| Item 14 | .781\*\* | -.392\*\* | .236 | **.779\*\*** | **.377\*\*** | .007 | .025 | .104\*\* | -.029 | -.052\* | .236 |
| ω |  | .654 |  |  | .647 |  |  |  |  |  |  |
| Identified (ID) |  |  |  |  |  |  |  |  |  |  |  |
| Item 5 | .794\*\* | -.192 | .333 | **.691\*\*** | .232\*\* | **.296\*\*** | -.064\* | .096\* | .039 | -.002 | .366 |
| Item 11 | .603\*\* | .659 | .202 | **.509\*\*** | -.054 | **.113\*** | .445\*\* | .062 | .189\*\* | -.090\* | .480 |
| Item 17 | .633\*\* | .092 | .590 | **.588\*\*** | -.058 | **.432\*\*** | .166\*\* | .123\*\* | .085\* | -.032 | .414 |
| ω |  | .441 |  |  |  | .360 |  |  |  |  |  |
| Introjected (IN) |  |  |  |  |  |  |  |  |  |  |  |
| Item 2 | .240\*\* | .478\*\* | .714 | **.291\*\*** | -.246\*\* | -.093 | **.408\*\*** | .010 | .375\*\* | .309\*\* | .444 |
| Item 8 | .668\*\* | .361\*\* | .424 | **.652\*\*** | .063 | .047 | **.355\*\*** | -.030 | .140\*\* | .178\* | .391 |
| Item 10 | .219\*\* | .735\*\* | .412 | **.106\*** | .042 | .034 | **.818\*\*** | .033 | .144\*\* | -.090 | .286 |
| Item 16 | .030 | .842\*\* | .290 | **-.046** | .102\*\* | .081\* | **.742\*\*** | -.021 | .266\*\* | .080 | .353 |
| ω |  | .760 |  |  |  |  | .785 |  |  |  |  |
| External-material (EM) |  |  |  |  |  |  |  |  |  |  |  |
| Item 6 | -.170\*\* | .316\*\* | .871 | **-.291\*\*** | .215\*\* | .027 | .245\*\* | **.170\*\*** | .427\*\* | .003 | .597 |
| Item 9 | -.113\* | .826\*\* | .305 | **-.173\*\*** | .082 | .043 | .001 | **.843\*\*** | .085 | .214 | .197 |
| Item 13 | .049 | .695\*\* | .515 | **-.005** | .078 | .025 | -.038 | **.586\*\*** | .293\*\* | .174\* | .532 |
| ω |  | .666 |  |  |  |  |  | .658 |  |  |  |
| External-social (ES) |  |  |  |  |  |  |  |  |  |  |  |
| Item 1 | .071 | .703\*\* | .501 | **.044** | -.237\*\* | -.153\*\* | .134\*\* | .170\*\* | **.700\*\*** | .079 | .376 |
| Item 12 | -.202\*\* | .745\*\* | .405 | **-.340\*\*** | .125\*\* | .151\*\* | .194\*\* | .073 | **.773\*\*** | .025 | .205 |
| Item 19 | -.038 | .827\*\* | .314 | **-.131\*** | -.050 | -.070 | .263\*\* | .123\*\* | **.700\*\*** | .036 | .400 |
| ω |  | .809 |  |  |  |  |  |  | .828 |  |  |
| Amotivation (AM) |  |  |  |  |  |  |  |  |  |  |  |
| Item 4 | -.566\*\* | .486\*\* | .444 | **-.590\*\*** | .001 | -.048 | -.007 | .036 | .067 | **.457\*\*** | .435 |
| Item 15 | -.708\*\* | .562\*\* | .183 | **-.722\*\*** | -.086 | .016 | .054 | .162\*\* | .130\* | **.494\*\*** | .180 |
| Item 18 | -.506\*\* | .721\*\* | .224 | **-.582\*\*** | .071 | -.017 | .076 | .222\*\* | -.043 | **.617\*\*** | .218 |
| ω | .895 | .786 |  | .910 |  |  |  |  |  | .747 |  |

*Note.* \* *p* < .05; \*\* *p* < .01; CFA: Confirmatory factor analysis; ESEM: Exploratory structural equation modeling; SDT: global self-determination; G: global factor as part of a bifactor model; S: specific factor as part of a bifactor model; λ: Factor loading; δ: Item uniqueness; ω: model-based omega composite reliability based on McDonald (1970); Target factor loadings are in bold.

**Table S5**

*Standardized Parameter Estimates from the Three-Factor CFA and ESEM Solutions for the Basic Psychological Need Satisfaction Scale*

|  |  |  |
| --- | --- | --- |
|  | CFA | ESEM |
| Factor (λ) | δ | AS (λ) | CS (λ) | RS (λ) | δ |
| Autonomy satisfaction (AS) |  |  |  |  |  |  |
| Item 1 | .821\*\* | .326 | **.220\*\*** | .246\*\* | .421\*\* | .446 |
| Item 4 | .677\*\* | .542 | **.774\*\*** | -.006 | -.001 | .407 |
| Item 7 | .667\*\* | .556 | **.799\*\*** | -.004 | -.036 | .397 |
| ω | .767 |  | .720 |  |  |  |
| Competence satisfaction (CS) |  |  |  |  |  |  |
| Item 2 | .733\*\* | .463 | .110 | **.651\*\*** | .002 | .487 |
| Item 5 | .900\*\* | .190 | -.033 | **.816\*\*** | .148\*\* | .225 |
| Item 8 | .820\*\* | .327 | -.043 | **.917\*\*** | -.086\*\* | .265 |
| Item 10 | .809\*\* | .345 | .082\* | **.852\*\*** | -.145\*\* | .310 |
| ω | .889 |  |  | .891 |  |  |
| Relatedness satisfaction (RS) |  |  |  |  |  |  |
| Item 3 | .884\*\* | .218 | .089\* | .030 | **.787\*\*** | .263 |
| Item 6 | .816\*\* | .334 | .102\*\* | -.045 | **.793\*\*** | .304 |
| Item 9 | .576\*\* | .668 | -.133\* | .088 | **.639\*\*** | .622 |
| ω | .809 |  |  |  | .805 |  |

*Note*. \**p* < .05; \*\**p* < .01; CFA: Confirmatory factor analysis; ESEM: Exploratory structural equation modeling; λ: Factor loading; δ: Item uniqueness; ω: model-based omega composite reliability based on McDonald (1970); Target factor loadings are in bold.

**Table S6**

*Latent Factor Correlations from the First-order CFA (below the diagonal) and ESEM (above the diagonal) Solutions for the Basic Psychological Need Satisfaction Scale*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Autonomy satisfaction | Competence satisfaction | Relatedness satisfaction |
| Autonomy satisfaction | — | .519\*\* | .588\*\* |
| Competence satisfaction | .649\*\* | — | .495\*\* |
| Relatedness satisfaction | .780\*\* | .523\*\* | — |

*Note.* \* *p* < .05; \*\* *p* < .01; CFA: Confirmatory factor analysis; ESEM: Exploratory structural equation modeling.

**Table S7**

*Standardized Parameter Estimates from the Bifactor ESEM Solution for the Basic Psychological Need Satisfaction Scale*

|  |  |  |
| --- | --- | --- |
|  | CFA | ESEM |
| G (λ) | S (λ) | δ | NS (λ) | AS (λ) | CS (λ) | RS (λ) | δ |
| Autonomy satisfaction (AS) |  |  |  |  |  |  |  |  |
| Item 1 | .862 | -.119 | .243 | **.714** | **.111** | .158 | .040 | .451 |
| Item 4 | .598 | .306 | .548 | **.535** | **.828** | .015 | .002 | .028 |
| Item 7 | .607 | .766 | .045 | **.548** | **.367** | .055 | -.199 | .523 |
| ω |  | .629 |  |  | .630 |  |  |  |
| Competence satisfaction (CS) |  |  |  |  |  |  |  |  |
| Item 2 | .525 | .487 | .487 | **.468** | .129 | **.526** | .030 | .487 |
| Item 5 | .649 | .585 | .237 | **.598** | .053 | **.650** | .147 | .195 |
| Item 8 | .484 | .713 | .257 | **.454** | .018 | **.718** | -.053 | .275 |
| Item 10 | .498 | .655 | .323 | **.463** | .065 | **.685** | -.169 | .284 |
| ω |  | .820 |  |  |  | .843 |  |  |
| Relatedness satisfaction (RS) |  |  |  |  |  |  |  |  |
| Item 3 | .700 | .508 | .252 | **.853** | -.051 | -.064 | **.040** | .264 |
| Item 6 | .643 | .536 | .299 | **.832** | -.064 | -.132 | **.024** | .285 |
| Item 9 | .466 | .335 | .670 | **.556** | -.050 | -.001 | **.555** | .381 |
| ω | .915 | .609 |  | .920 |  |  | .292 |  |

*Note.* \* *p* < .05; \*\* *p* < .01; CFA: Confirmatory factor analysis; ESEM: Exploratory structural equation modeling; NS: need satisfaction; G: global factor as part of a bifactor model; S: specific factor as part of a bifactor model; λ: Factor loading; δ: Item uniqueness; ω: model-based omega composite reliability based on McDonald (1970); Target factor loadings are in bold.

T**able S8**

*Standardized Parameter Estimates from the Three-Factor CFA Outcome Solution*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | EE (λ) | WS (λ) | TI (λ) | δ |
| Emotional exhaustion (EE) |  |  |  |  |
| Item 1 | .798\*\* |  |  | .363 |
| Item 2 | .842\*\* |  |  | .291 |
| Item 3 | .882\*\* |  |  | .222 |
| Item 4 | .907\*\* |  |  | .178 |
| Item 5 | .910\*\* |  |  | .172 |
| ω | .939 |  |  |  |
| Work satisfaction (WS) |  |  |  |  |
| Item 1 |  | .804\*\* |  | .354 |
| Item 2 |  | .760\*\* |  | .422 |
| Item 3 |  | .888\*\* |  | .212 |
| Item 4 |  | .837\*\* |  | .299 |
| Item 5 |  | .809\*\* |  | .345 |
| ω |  | .911 |  |  |
| Turnover intentions (TI) |  |  |  |  |
| Item 1 |  |  | .717\*\* | .486 |
| Item 2 |  |  | .703\*\* | .506 |
| Item 3 |  |  | .944\*\* | .109 |
| Item 4 |  |  | .626\*\* | .608 |
| Item 5 |  |  | .888\*\* | .212 |
| Item 6 |  |  | .579\*\* | .665 |
| Item 7 |  |  | .935\*\* | .126 |
| ω |  |  | .731 |  |

*Note*. \**p* < .05; \*\**p* < .01; λ: Factor loading; δ: Item uniqueness; ω: model-based omega composite reliability based on McDonald (1970).