Positive and Negative Affect Schedule (PANAS) at Work
Proprietà psicometriche

Annamaria Di Fabio[1] e Alessio Gori[2]

Sommario

L'obiettivo del presente lavoro è quello di esaminare le proprietà psicometriche del *Positive and Negative Affect Schedule (PANAS) at work* per utilizzare questo strumento con un focus specifico nel contesto lavorativo. Lo strumento *PANAS* è stato somministrato a 209 lavoratori. Sono state analizzate dimensionalità, attendibilità e validità concorrente. L'analisi fattoriale confermativa ha mostrato una struttura a due dimensioni dello strumento. La coerenza interna e la validità concorrente sono risultate buone. I risultati mostrano che il *PANAS at Work* sembra una misura valida e attendibile per valutare i *positive and negative affects* in relazione allo specifico contesto lavorativo.

Parole chiave

Positive affect at work, Negative affect at work, Proprietà psicometriche, *Positive and Negative Affect Schedule (PANAS) at work,* Contesto lavorativo.

[1] Direttore dell'International Research and Intervention Laboratory «Work and Organizational Psychology for Vocational Guidance, Career Counseling, Talents and Healthy Organizations» e dell'International Research and Intervention Laboratory «Cross-Cultural Positive Psychology, Prevention, and Sustainability», Dipartimento di Formazione, Lingue, Intercultura, Letteratura e Psicologia (Sezione di Psicologia), Università degli Studi di Firenze, https://www.forlilpsi.unifi.it/vp-30-laboratori.html.
[2] Dipartimento di Scienze della Salute (DSS) — Università degli Studi di Firenze.

Positive and Negative Affect Schedule (PANAS) at work
Psychometric properties

Annamaria Di Fabio[1] and Alessio Gori[2]

Abstract

The aim of the present study is to examine the psychometric properties of the *Positive and Negative Affect Schedule (PANAS) at work* for using this instrument with a specific focus on the work context. The PANAS instrument was administered to 209 workers. Dimensionality, reliability and concurrent validity were analysed. Confirmatory factor analysis showed a structure with two dimensions. The internal consistency and the concurrent validity of the instrument were good. The results showed that the PANAS at work is a valid and reliable measure to evaluate *positive and negative affects* in relation to the specific work context.

Keywords

Positive affect at work, Negative affect at work, Psychometric properties, *Positive and Negative Affect Schedule* (PANAS) *at work,* Work context.

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[1] Director of the International Research and Intervention Laboratory «Work and Organizational Psychology for Vocational Guidance, Career Counseling, Talents and Healthy Organizations» and of the International Research and Intervention Laboratory «Cross-Cultural Positive Psychology, Prevention, and Sustainability», Department of Education, Languages, Intercultures, Literatures and Psychology (Psychology Session), University of Florence, https://www.forlilpsi.unifi.it/vp-30-laboratori.html.

[2] Department of Health Sciences, University of Florence.

The twenty-first century is characterized by a rapidly changing world in which challenges and transitions are increasingly frequent in the workplace and in society more generally (Blustein et al., 2019). The sense of insecurity and instability can therefore represent a threat to the well-being of individuals and organizational life (Di Fabio & Kenny, 2016b, 2019; Peiró et al., 2012). The theme of well-being represents a key element in organizational research, also in relation to an extended conception of the concept of health, based on the definition of the World Health Organization. The importance of combining healthy business with healthy workers for healthy organizations has emerged (Di Fabio, 2017a, 2017b; Di Fabio et al., 2020; Di Fabio & Peiró, 2018; Peiró et al., 2000), focusing on the added value of positive circularity.

In relation to the definition of the construct of well-being, it is possible to distinguish between hedonic well-being and eudaimonic well-being (Ryan & Deci, 2001). Hedonic well-being includes two components: an affective evaluation component in terms of positive affect and negative affect (Watson et al., 1988) and a cognitive evaluation component in terms of life satisfaction (Diener et al., 1985). Eudaimonic well-being refers to optimal functioning and self-realization (Ryan & Deci, 2001), life meaning and purposefulness (Waterman et al., 2010), and flourishing (Diener et al., 2010).

The traditional instrument most used in literature for measuring positive affect and negative affect is represented by the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988), for which the Italian version by Terracciano et al. (2003) exists. The tool comprises 20 adjectives, of which 20 relate to positive affect and 20 relate to negative affect.

From an analysis of literature, the lack of a specific tool to measure positive affect and negative affect specifically in the work context emerged and therefore it was considered appropriate to develop the PANAS at work (by Di Fabio & Gori) and evaluate its psychometric properties in order to have a tool with a specific work focus for the purpose of detecting the affective component of hedonic well-being at work. Having this type of tool, capable of detecting positive affect and negative affect specifically in the work context, could favour the emergence of promising perspectives for research and intervention in relation to the stimuli proposed by the Well-being movement (Robertson & Cooper, 2010; Johnson et al., 2018), in terms of relevance for increasing both work performance and reducing negative outcomes in the workplace, with the aim of promoting the well-being of workers in a framework that can be traced back to healthy organizations (Di Fabio, 2017a, 2017b; Di Fabio et al., 2020; Di Fabio & Peiró, 2018; Peiró et al., 2020; Peiró & Rodríguez, 2008; Tetrick & Peiró, 2012).

Therefore, the present study aims to examine the psychometric properties of the Positive and Negative Affect Schedule (PANAS) at work to use this instrument with a specific focus on the work context.

Method

Participants

Participants in the study were 209 workers from Tuscany (55.34% male, 44.66% female; mean age = 49.72, *SD* = 9.56).

Measures

Positive and Negative Affect Schedule (*PANAS*) *at work* (by Di Fabio & Gori). It comprises twenty adjectives, ten of which relate to Positive Affect (PA) (examples «enthusiastic», «interested», «determined») and ten relate to Negative Affect (NA) (examples «irritable», «afraid», «distressed»). In PANAS at work the participants are asked to indicate the intensity of feelings which on average they generally have at work on a scale from 1 = «Very very slightly or not at all» to 5 = «Extremely». The psychometric properties of this instrument will be analysed in the present study.

Satisfaction With Life Scale (Diener et al., 1985; Italian version by Di Fabio & Gori, 2020). It consists of five items on a 7-point scale from 1 = «Strongly disagree» to 7 = «Strongly agree». The reliability of the scale is .88.

The Meaningful Life Measure (MLM, Morgan & Farsides, 2009; Italian version by Di Fabio, 2014). It consists of 23 items with a 7-point response format from 1 = «Strongly disagree» to 7 = «Strongly agree». It allows a total score to be recorded and the score in five dimensions: Exciting life, Accomplished life, Principled life, Purposeful life, Valued life. Regarding reliability, Cronbach's alpha is .85 for the total score, .85 for Exciting life, .87 for Accomplished life, .86 for Principled life, .85 for Purposeful life and .84 for Valued life.

Procedure

The measures were administered by specialized personnel. The sequence of administration of the questionnaires was counterbalanced to control the possible effects related to the order of presentation. For administration, the rules relating to privacy and informed consent established by Italian law were respected.

Data Analysis

A Confirmatory Factor Analysis (AFC) with the maximum likelihood method using the AMOS software was conducted to verify the factorial structure of the Positive and Negative Affect Schedule (PANAS) at work. Various indices of fit have been taken into consideration: ratio between x^2 and degrees of freedom (x^2 / df),

for which there is a good fit for values between 1 and 3; Comparative Fit Index (CFI, Bentler, 1990) and Non-Normed Fit Index (NNFI, Tucker & Lewis, 1973), for which there is a good fit for values above .90; SRMR and RMSEA (Browne & Cudeck, 1993), for which there is a good fit for values less than .08. To assess reliability, Cronbach's alpha was calculated. To verify concurrent validity, the correlations of PANAS at work with SWLS and MLM were calculated.

Results

The two-dimensional structure (Positive Affect at work and Negative Affect at work) of PANAS at work was confirmed by the confirmatory factor analysis conducted, showing good indices of Goodness of Fit (Table 1).

Table 1
Goodness of Fit Indices (N = 209).

PANAS at work	χ^2/gdl	TLI	CFI	RMSEA	SRMR
	1.58	.93	.92	.08	.06

Regarding reliability, the Positive Affect at work dimension has a Cronbach alpha of .86 and the Negative Affect at work dimension shows a Cronbach alpha of .89.

With regard to concurrent validity, Table 2 shows the correlations of the two dimensions of PANAS at work with SWLS and MLM.

Table 2
Correlations of the two dimensions of PANAS at work (Positive Affect and Negative Affect) with SWLS and MLM.

	SWLS	MLM
Positive Affect at work	.34**	.31**
Negative Affect at work	-.37**	-.30**

*Note. N = 209. ** p < .01.*

Discussions

The aim of this work was to examine the psychometric properties of the Positive and Negative Affect Schedule (PANAS) at work to have the opportunity to use this instrument with a specific focus on the work context.

The two-dimensional structure of PANAS at work (Positive Affect and Negative Affect), in line with the version of PANAS by Watson et al. (1988), was confirmed through the AFC. The two dimensions Positive Affect at work and Negative Affect at work have a good reliability verified by calculating the Cronbach alpha coefficient. The concurrent validity of PANAS at work is adequate considering the positive relationships of the Positive Affect at work dimension and the inverse relationships of the Negative Affect at work dimension with life satisfaction and meaning in life. These correlations highlight that the Positive Affect at work dimension is, in particular, positively associated with aspects of cognitive evaluation of hedonic well-being in terms of life satisfaction (Diener et al., 1985), maintaining its specificity, but also to a lesser extent with aspects of eudaimonic well-being in terms of life meaning (Morgan & Farsides, 2009). Conversely, the Negative Affect at work dimension presents, in particular, negative correlations with life satisfaction (Diener et al., 1985) and with life meaning (Morgan & Farsides, 2009). In both cases, both for the Positive Affect at work and for the Negative Affect at work, the values of the correlations testify to an association with the hedonic and eudaimonic aspects of well-being detected, but not an overlap, underlining that PANAS at work is a specific measure to detect the affective evaluation component of hedonic well-being in the work context.

Although the results of this study show that PANAS at work is a valid and reliable instrument for detecting the positive affect and negative affect dimensions in the workplace, it is necessary to consider the limitation of having examined the psychometric properties of this measure only with workers in Tuscany. Future research should therefore consider workers from other geographic areas in Italy in order to generalize the results. The psychometric properties of PANAS at work could also be evaluated in other countries for possible comparative studies.

While considering the limitations of this study, PANAS at work is adequate for detecting the two dimensions (Positive Affect and Negative Affect) of the affective component of hedonic well-being in the workplace, offering new opportunities for research and intervention to respond to the stimuli of the well-bing movement. (Robertson & Cooper, 2010; Johnson et al., 2018) from a perspective of healthy organizations (Di Fabio, 2017a, 2017b; Di Fabio et al., 2020; Peiró et al., 2020), considering the prevention perspective, also in terms of primary prevention (Di Fabio & Kenny, 2015, 2016a; Hage et al., 2007) and strength-based prevention perspectives (Di Fabio & Saklofske, 2021).

Bibliography

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107*(2), 238-246. doi: 10.1037/0033-2909.107.2.238

Blustein, D.L., Kenny, M. E., Di Fabio, A., & Guichard, J. (2019). Expanding the impact of the psychology of working: Engaging psychology in the struggle for decent work and human rights. *Journal of Career Assessment, 27,* 3-28; doi: 10.1177/1069072718774002

Browne, M. W. (1990). *MUTMUM PC: User's guide*. Columbus, OH: Department of Psychology, Ohio State University.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen, & J. S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Newsbury Park, CA: Sage.

Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*(1), 71-75. doi: 10.1207/s15327752jpa4901_13

Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D. W., Oishi, S., & Biswas-Diener, R. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research*, *97*(2), 143-156. doi: 10.1007/s11205-009-9493-y

Di Fabio, A. (2014). Meaningful Life Measure: Primo contributo alla validazione della versione italiana [Meaningful Life Measure: First contribution to the validation of the Italian version]. *Counseling Giornale Italiano di Ricerca e Applicazioni, 7,* 307-315.

Di Fabio, A. (2017a). Positive Healthy Organizations: Promoting well-being, meaningfulness, and sustainability in organizations. *Frontiers in Psychology. Organizational Psychology, 8,* 1938. doi: 10.3389/fpsyg.2017.01938

Di Fabio, A. (2017b). The psychology of sustainability and sustainable development for well-being in organizations. *Frontiers in Psychology. Organizational Psychology, 8,* 1534. doi: 10.3389/fpsyg.2017.01534

Di Fabio, A., & Gori, A. (2020). Satisfaction with Life Scale among Italian workers: Reliability, factor structure and validity through a big sample study. *Sustainability MDPI, 12*(14), 5860. doi: doi:10.3390/su12145860

Di Fabio, A., & Kenny, M. E. (2015). The contributions of emotional intelligence and social support for adaptive career progress among Italian youth. *Journal of Career Development*, *42*, 48-59. doi: 10.1177/0894845314533420

Di Fabio, A., & Kenny, M. E. (2016a). From decent work to decent lives: Positive Self and Relational Management (PS&RM) in the twenty-first century. *Frontiers in Psychology.Section Organizational Psychology*, *7,* 361. doi: 10.3389/fpsyg.2016.00361

Di Fabio, A., & Kenny, M. E. (2016b). Promoting well-being: The contribution of emotional intelligence. *Frontiers in Psychology. Organizational Psychology*, *7,* 1182. doi: 10.3389/fpsyg.2016.01182

Di Fabio, A., & Kenny, M. E. (2019). Decent work in Italy: Context, conceptualization, and assessment. *Journal of Vocational Behavior*, *110*(Part A), 131-143. doi: 10.1016/j.jvb.2018.10.014

Di Fabio, A., & Peiró, J. M. (2018). Human Capital Sustainability Leadership to promote sustainable development and healthy organizations: A new scale. *Sustainability*, *10*(7), 2413. doi: 10.3390/su10072413

Di Fabio, A., & Saklofske, D. H. (2021). The relationship of compassion and self-compassion with personality and emotional intelligence. PAID 40th anniversary special issue. *Personality and Individual Differences*, *157*. doi: 10.1016/j.paid.2020.110109.

Di Fabio, A., Cheung, F., & Peiró, J.-M. (2020). Editorial Special Issue Personality and individual differences and healthy organizations. *Personality and Individual Differences*, *166*. doi: 10.1016/j.paid.2020.110196

Hage, S. M., Romano, J. L., Conyne, R. K., Kenny, M., Matthews, C., Schwartz, J. P., & Waldo,

M. (2007). Best practice guidelines on prevention practice, research, training, and social advocacy for psychologists. *The Counseling Psychologist, 35,* 493-566. doi: 10.1177/0011000006291411

Johnson, S., Robertson, I., & Cooper, C.L. (2018). *Wellbeing: Productivity and Happiness at Work.* (2nd ed.). London: Palgrave Macmillan.

Morgan, J., & Farsides, T. (2009). Psychometric evaluation of the meaningful life measure. *Journal of Happiness Studies, 10*(3), 351-366. doi: 10.1007/s10902-008-9093-6

Peiró, J. M., Bayonab, J. A., Caballer, A., & Di Fabio, A. (2020). Importance of work characteristics affects job performance: The mediating role of individual dispositions on the work design-performance relationships. *PAID 40*th *Anniversary Special Issue. Personality and Individual Differences, 157.* doi: 10.1016/j.paid.2019.109808

Peiró, J. M., & Rodríguez, I. (2008). Work stress, leadership and organizational health. *Papeles del Psicólogo, 29*(1), 68-82.

Peiró, J. M., Sora, B., & Caballer, A. (2012). Job insecurity in the younger Spanish workforce: Causes and consequences. *Journal of Vocational Behavior, 80*(2), 444-453. doi: 10.1016/j.jvb.2011.09.007

Robertson, I., & Cooper, C.L. (2010). *Wellbeing: Productivity and Happiness at Work.* London: Palgrave Macmillan.

Ryan, R. M., & Deci, E. L. (2001). To be happy or to be self-fulfilled: A review of research on hedonic and eudaimonic well-being. In S. Fiske (Ed.), *Annual Review of Psychology* (Vol. 52, 141-166). Palo Alto, CA: Annual Reviews.

Terraciano, A., McCrae, R. R., & Costa Jr, P. T. (2003). Factorial and construct validity of the Italian Positive and Negative Affect Schedule (PANAS). *European journal of psychological assessment, 19*(2), 131-141. doi: 10.1027/1015-5759.19.2.131

Tetrick, L. E. & Peiró, J. M. (2012). Occupational Safety and Health. In *The Oxford Handbook of Organizational Psychology* (Vol. 2). Oxford, UK: Oxford University Press.

Waterman, A. S., Schwartz, S. J., Zamboanga, B. L., Ravert, R. D., Williams, M. K., Bede Agocha, V., et al. (2010). The Questionnaire for Eudaimonic Well-Being: Psychometric properties, demographic comparisons, and evidence of validity. *Journal of Positive Psychology, 5,* 41-61. doi: 10.1080/17439760903435208

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063-1070. doi: 10.1037//0022-3514.54.6.1063