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## ORIGINAL ARTICLE

# Optimism and pessimism in the general population: Psychometric properties of the Life Orientation Test (LOT-R)

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### KEYWORDS

Optimism;  
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study

**Abstract** *Background/Objective:* The Life Orientation Test-Revised (LOT-R) is often used to assess dispositional optimism. The aims of this study were to test psychometric properties of the LOT-R, to provide normative scores, and to test the association between optimism and several psychological, sociodemographic, and behavioral factors. *Method:* A randomly selected German general population community sample with an age range of 18-80 years ( $N = 9,711$ ) was surveyed. *Results:* The Confirmatory Factor Analysis (CFA) proved two (correlated) factors: *Optimism* and *Pessimism*. Invariance tests across gender and age groups confirmed metric invariance. There were only small gender differences in the LOT-R total score ( $M = 16.4$  for females and  $M = 16.1$  for males). The correlation between the subscales *Optimism* and *Pessimism* was strong for young and well educated people. Low optimism mean scores were observed for unemployed people, people with low income, smokers, and obese people. Normative scores of the LOT-R are provided. *Conclusions:* The study confirmed the bidimensional structure of the LOT-R and invariance across age and gender. We can recommend using this instrument for measuring dispositional optimism and pessimism in epidemiological research and clinical practice.

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**PALABRAS CLAVE**

Optimismo;  
pesimismo;  
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medición;  
Estudio descriptivo  
mediante encuestas

**Optimismo y pesimismo en la población general: propiedades psicométricas del Life Orientation Test (LOT-R)**

**Resumen** *Antecedentes/Objetivo:* La versión revisada del *Life Orientation Test* (LOT-R) se emplea a menudo para evaluar el optimismo disposicional. Los objetivos de este estudio fueron establecer las propiedades psicométricas del LOT-R, y probar la asociación entre optimismo y varios factores psicológicos, socio-demográficos y conductuales. *Método:* Para ello se entrevistó una muestra comunitaria aleatoriamente seleccionada de la población general alemana, con un rango de edad de 19-80 años ( $N=9.711$ ). *Resultados:* El Análisis Factorial Confirmatorio (CFA) sugiere dos factores (correlacionados): *Optimismo* y *Pesimismo*. Las pruebas de invarianza para género y edad confirmaron la invarianza métrica. Solamente se encontraron pequeñas diferencias de género en el puntaje total ( $M=16,4$  para mujeres y  $M=16,1$  para hombres). Se encontraron bajos puntajes medios en personas desempleadas, personas con bajos ingresos, fumadores y personas con obesidad. Se proveen valores normativos para el LOT-R. *Conclusiones:* El estudio confirma la estructura bidimensional del LOT-R y la invarianza en género y edad. El instrumento puede recomendarse para medir optimismo disposicional y pesimismo en investigación epidemiológica y en la práctica clínica.

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Dispositional optimism is defined as a general tendency to expect positive outcomes (Carver & Scheier, 2014; Carver, Scheier, & Segerstrom, 2010). It is one of the resource-oriented variables that have gained increasing interest in recent years as part of the larger trend of finding new ways to supplement the traditionally deficit-oriented perspective of clinical psychology. Optimism is associated with differences in mental (Carver et al., 2010) and physical (Rasmussen, Scheier, & Greenhouse, 2009; Roy et al., 2010) health, quality of life (Gison, Rizza, Bonassi, Donati, & Giaquinto, 2015; Jiang et al., 2014; Kreis et al., 2015; Vera-Villarroel, Valtierra, & Contreras, 2016), life satisfaction (Jiang et al., 2014), adaptive coping styles (Nes & Segerstrom, 2006), recovery after severe illness (Scheier et al., 1999), and even mortality (Anthony, Kritz-Silverstein, & Barrett-Connor, 2016; Giltay, Geleijnse, Zitman, Hoekstra, & Schouten, 2004; Grossardt, Bower, Geda, Colligan, & Rocca, 2009).

The Life Orientation Test-Revised (LOT-R) (Scheier, Carver, & Bridges, 1994) is the test used most often for assessing dispositional optimism. It has been translated to many languages and psychometrically tested in multiple studies, including tests of its dimensional structure (Cano-García et al., 2015; Glaesmer et al., 2012; Zenger et al., 2013), temporal stability (Saboonchi, Petersson, Alexanderson, Brandstrom, & Wennman-Larsen, 2016), and item response theory (Chiesi, Galli, Primi, Innocenti Borgi, & Bonacchi, 2013; Steca, Monzani, Greco, Chiesi, & Primi, 2015). The LOT-R has proved to be an independent predictor of later depression in the general population (Armbruster, Pieper, Klotsche, & Hoyer, 2015) and in cancer patients (Zenger, Brix, Borowski, Stolzenburg, & Hinz, 2010). Normative values of the general population are available for Germany (Glaesmer et al., 2012) and Colombia (Zenger et al., 2013). The test consists of two subscales, Optimism and Pessimism. Originally, the test was

designed as a unidimensional instrument. However, the correlation between the subscales (which have been theoretically assumed to be substantially negative) proved to be weak in most empirical studies with coefficients of about  $r=-.20$ . Furthermore, confirmatory factorial analyses yielded markedly better fit indices for a two-factorial model compared to the originally designed one-dimensional model (Glaesmer et al., 2012; Monzani, Steca, & Greco, 2014; Zenger et al., 2013). Based on a sample of 906 Spanish participants, Cano-García et al. (2015) tested several models using CFA. They found that the one-factorial model was better than the model with two independent factors (optimism and pessimism), but that a bifactorial model, whereby the two factors were allowed to be correlated, provided the best fit indices. A further study (Zenger et al., 2013) confirmed these findings, tested the invariance across age and gender, and proved age and gender invariance.

In two studies analyzing correlations between optimism and pessimism (Glaesmer et al., 2012; Herzberg, Glaesmer, & Hoyer, 2006), it was observed that the theoretically assumed negative correlations were (at least partly) obtained in subsamples of young and well educated people, while in older and less educated subsamples the correlations were near zero. Our intent with this study was to test whether this effect can be confirmed. Several studies have correlated the LOT-R scores with other scales and found correlations with variables such as mental and physical quality of life fatigue, anxiety, depression, and self-efficacy (Glaesmer et al., 2012; Monzani et al., 2014; Zenger et al., 2013). An accidental finding in these studies was that the magnitude of the correlation of the optimism subscale was higher than that of the pessimism subscale. We aimed at proving this effect in our study as well. While previous studies have examined age and gender differences in optimism and pessimism, little is

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