JP3I (Jurnal Pengukuran Psikologi dan Pendidikan Indonesia)
DOI: http://dx.doi.org/10.15408/jp3i.v14i2.43272
http://journal.uinjkt.ac.id/index.php/jp3i

A Meta-analysis of Coefficient Alpha for the Revised Life Orientation Test (LOT-R)

Wahyu Syahputra[1], Bahrul Hayat[2]

[1]Department of Psychology, Faculty of Humanities, Bina Nusantara University
[2]Faculty of Psychology, State of Islamic University Syarif Hidayatullah

wahyu.syahputra@binus.ac.id

Abstract

The Revised Life Orientation Test (LOT-R) is one of the most popular instruments for measuring optimism. The authors conducted a meta-analysis, also known as a reliability Generalization study, to estimate the population Cronbach's Alpha for the LOT-R. This study also examined Alpha heterogeneity and identified factors that might influence it. Using a Random Effects Model, the estimated population Cronbach's Alpha based on 211 studies was found to be 0.768 (95% CI: 0.757, 0.778), indicating a good level of reliability. The heterogeneity analysis revealed an I^2 value of 95.84%, suggesting significant differences among the studies. These differences may stem from factors beyond just methodological variations or population samples. To understand the possible causes for this heterogeneity, a meta-regression analysis was performed, focusing on moderator variables including gender, age, study setting, study type, citation, and language. Among these moderator variables, only the language variable showed a significant impact on the variation in Cronbach's Alpha. In conclusion, the findings suggest that the LOT-R is a reliable instrument for measuring optimism. However, the study also reveals that linguistic factors may influence its reliability, potentially limiting the generalizability of findings across different language groups and in cross-cultural contexts. Therefore, researchers should consider language-related variations when interpreting LOT-R results. Future studies are encouraged to examine further how linguistic differences may affect the instrument's validity and to explore ways to optimize its use across diverse cultural settings.

Keywords: Cronbach's alpha, Heterogeneity, LOT-R, Meta-analysis of reliability coefficient, Reliability Generalization.

Abstrak

The Revised Life Orientation Test (LOT-R) merupakan salah satu instrumen ukur optimisme yang paling populer. Para penulis melakukan meta-analisis, yang juga dikenal sebagai studi generalisasi reliabilitas, untuk memperkirakan nilai Cronbach's Alpha populasi untuk LOT-R. Studi ini juga menganalisis heterogenitas Alpha dan mengidentifikasi faktor-faktor yang mungkin memengaruhi heterogenitas tersebut. Menggunakan Model Efek Acak, Cronbach's Alpha populasi yang diestimasi berdasarkan 211 studi sebesar 0.768 (95% CI: 0.757, 0.778), menunjukkan tingkat reliabilitas yang baik. Analisis heterogenitas menunjukkan nilai I^2 sebesar 95,84%, menunjukkan perbedaan yang signifikan di antara studi-studi tersebut. Perbedaan ini mungkin disebabkan oleh faktor-faktor di luar variasi metodologis atau sampel populasi. Untuk memahami penyebab heterogenitas ini, dilakukan analisis regresi meta, dengan fokus pada variabel moderator termasuk jenis kelamin, usia, setting studi, jenis studi, kutipan, dan bahasa. Di antara variabel moderator ini, hanya variabel bahasa yang menunjukkan dampak signifikan terhadap variasi Cronbach's Alpha. Kesimpulan studi ini menunjukkan bahwa LOT-R merupakan alat ukur yang andal untuk mengukur optimisme. Namun, studi ini juga mengungkapkan bahwa faktor linguistik dapat memengaruhi keandalan alat ukur tersebut, yang berpotensi membatasi generalisasi temuan di antara kelompok bahasa yang berbeda dan dalam konteks lintas budaya. Oleh karena itu, peneliti disarankan untuk mempertimbangkan variasi terkait bahasa saat menafsirkan hasil LOT-R. Studi selanjutnya dianjurkan untuk menyelidiki lebih lanjut bagaimana perbedaan linguistik dapat memengaruhi validitas alat ukur tersebut dan untuk mengeksplorasi cara-cara untuk mengoptimalkan penggunaannya di berbagai setting budaya.

Kata kunci: *Cronbach's alpha, Generalisasi Reliabilitas, Heterogenitas, LOT-R, Meta-analisis koefisien reliabilitas.*

Introduction

Optimism is a stable personality trait characterized by a positive outlook on the future. An optimistic person tends to believe that good things are likely to happen, whereas a pessimist expects unfavorable outcomes (Scheier & Carver, 1985). Optimism has become an important topic of discussion across various fields, including education, psychology, management, and medicine.

In 1985, Scheier and Carver developed the Life Orientation Test (LOT) to measure optimism. As the original version was considered insufficiently focused on future expectations, the instrument was revised nine years later, in 1994, resulting in the Revised Life Orientation Test (LOT-R), which consists of 10 items. Additionally, it was argued that the effects attributed to optimism could not be clearly distinguished from those of neuroticism (Scheier & Carver, 1985). Following these revisions, Schou-Bredal et al. (2017) reported that the LOT-R items effectively differentiate individuals with varying levels of optimism (Chiesi et al., 2013). This conclusion is further supported by item response theory (IRT) analyses, which provide evidence for the LOT-R's accuracy and reliability (Schou-Bredal et al., 2017).

The LOT-R has been used in various countries and translated into multiple languages, with numerous studies reporting its internal consistency. Suryadi et al. (2021) found a Cronbach's alpha of 0.76 for the translated LOT-R in a sample of Indonesian high school students, which is comparable to the original version developed by Scheier and Carver (1985), who reported a Cronbach's alpha of 0.78. In other studies, Leong Abdullah et al. (2019) reported an alpha of 0.78 in a sample of cancer patients in Malaysia, while research on family caregivers of Alzheimer's patients in Spain yielded a Cronbach's alpha of 0.72. Additionally, Serlachius et al. (2015) reported Cronbach's alpha scores for three subscales in a cardiovascular health sample: total, 0.78; optimism, 0.71; and pessimism, 0.78. Similarly, Schou-Bredal et al. (2017) found total alpha of 0.75, pessimism of 0.77, and optimism of 0.84 in a study on mental health and life satisfaction among Norwegians.

Cronbach's alpha is one of the most widely used measures of reliability in the social sciences (Bollen, 1989) and was originally developed by Cronbach in 1951. Reliability refers to the extent to which an assessment tool produces stable and consistent results (Greco et al., 2018). However, when reliability coefficients are reported with confidence intervals based on a single sample, these intervals can be too broad to provide meaningful insights into the impact of reliability on statistical analyses (Bonett, 2010).To overcome this limitation, meta-analysis can be employed to combine reliability estimates from multiple independent studies (Bonett, 2010). This approach involves statistically aggregating and systematically synthesizing the results of similar studies to produce more robust and generalizable estimates (Borenstein et al., 2009; Card, 2012; Rodriguez & Maeda, 2006a). By pooling data across studies, meta-analysis offers stronger evidence than individual studies alone, enabling a more comprehensive evaluation of a measure's reliability (Hayat, 2024). Moreover, as Miller et al. (2018) noted, meta-analysis can assign greater weight to alpha coefficients with smaller variances, resulting in more precise and accurate estimates.

In the 1990s, Tammy Vacha-Haase introduced a method known as Reliability Generalization (RG), which is a meta-analytic approach to examining the reliability of measurement instruments. RG was developed because reliability coefficients have different distributional properties compared to traditional effect size estimates like Cohen's d or correlation coefficients. This discrepancy makes conventional meta-analytic techniques unsuitable for aggregating reliability coefficients (Greco et al., 2018). Reliability Generalization enables researchers to assess the average error variance of measurements, identify sources of variance that are specific to certain samples (Vacha-Haase, 1998), and examine reliability estimates of tests across various studies. Furthermore, RG can be applied to analyze reliability across different scales that measure the same construct (Romano & Kromrey, 2009).

In summary, the Reliability Generalization (RG) method addresses three key issues: the estimation of reliability, the assessment of heterogeneity, and the explanation of variability across studies. Tackling these issues is crucial for synthesizing the empirical reliability estimates reported in the literature for a specific test (Botella et al., 2010). By systematically evaluating and aggregating reliability coefficients from multiple studies, RG provides a more accurate estimate of a test's internal consistency. Additionally, it helps identify sample- or context-specific factors that contribute to variability in reliability

Objective

In this study, Reliability Generalization (RG) is applied to the Revised Life Orientation Test (LOT-R) with three main objectives: to estimate the population alpha in the aggregated study sample; to assess the heterogeneity of estimated alpha coefficients across studies and, if significant heterogeneity is detected, to investigate its sources; and to examine explanatory variables that influence the variations in alpha coefficients.

Methods

Selection Criteria for Study Sample

Before searching for a sample of studies, the researcher established four criteria to guide the selection of sampled studies. The criteria for studies to be included in this research are as follows: a) articles must use the LOT-R instrument or its translation, which refers to the standardized instrument developed by Scheier and Carver (1985)(1985); b) articles must report alpha reliability and be published in accredited scientific journals; c) there is no restriction on the year of publication for journal research reports; and d) the sample size in the article must consist of at least 10 participants.

Search Strategies

The procedure conducted in this alpha coefficient meta-analysis involved searching for and identifying studies that reported Cronbach's alpha values for the Life Orientation Test – Revised (LOT-R) instrument. The search process followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009). Researchers utilized online sources available through the Google Scholar database and employed a randomized search strategy.

The search was refined using various combinations of keywords, including "Life Orientation Test – Revised Reliability Alpha," "LOT-R Coefficient Alpha," "Life Orientation Test – Revised Internal Consistency," and "LOT-R Internal Consistency." No delimiters, such as publication year range, were used to limit the search.LOT-R studies that met the inclusion and exclusion criteria were examined for the availability of relevant statistical data, and background variables were compiled into the researchers' database.

Data Extraction

Data extraction from the selected samples involved examining and recording essential statistical data and background variables. The data extraction included Cronbach's alpha along with several background variables, which are defined as follows: 1) mean age, sex proportion (0. male majority (>50%); 1. female majority (>50%), citation proportion (0. small (<100); 1. medium (100< x <200); 2. high (> 200)), type of study (0. general; 1. psychometric), study setting (0. non-clinical; 1. clinical) and language (0. non-English; 1. English).

Data Cleaning

Before conducting the meta-analysis, the researchers cleaned the collected data to ensure that the included studies met the necessary sampling criteria. This step was crucial, as some studies reported information that did not accurately reflect original empirical findings (Henson & Thompson, 2002). For instance, some authors cited or reused reliability coefficients from previous studies instead of calculating them from their own data. These cases are known as induced reliability (Vacha-Haase, 1998). Induced reliability coefficients were excluded from the analysis because they do not represent genuine reliability estimates derived from the researchers' original samples.

Data Analysis

The first step in meta-analyzing alpha coefficients is to estimate the mean or population alpha coefficient across studies (Warne, 2008). This value represents what Rodriguez and Maeda (2006) refer to as the unknown population parameter to be estimated—the true average reliability of the instrument.

However, Cronbach's alpha is a function of the average inter-item correlation and the number of items in a scale (Thompson & Vacha-Haase, 2000). Because the distribution of correlations is often non-normal and associated with problematic standard errors, it is necessary to transform or calibrate alpha values to meet statistical assumptions (Tripepi et al., 2007). Consequently, the raw alpha coefficients should be transformed to normalize their distribution, stabilize variance across samples, and allow meaningful comparisons across studies. To fulfill this requirement in this study, we performed the transformation according to Bonett's formula (Bonett, 2002) as follows.

Let ρ_k represent the coefficient alpha for a scale consisting of k components, and let ρ_1 denote the reliability of a single component. Then $\bar{\rho}_k$ and $\bar{\rho}_1$ denote estimators of ρ_k and ρ_1. The logarithmic transformation formula was performed as below to normalize the alpha distribution

$$W = -ln(1 - \bar{\rho}_k)/2$$
$$= [ln\{[1 + (k - 1)\bar{\rho}_1]/(1 - \bar{\rho}_1)\}]/2$$

which is the variance-stabilizing transformation:

$$\text{var}\ \ln(1 - \bar{\rho}_k) \approx 2k / \{(k - 1)(n - 2)\}$$

A random-effects model was selected for this meta-analysis (Borenstein et al., 2009). The main advantage of the random-effects model is that it allows for generalization beyond the specific studies included in the meta-analysis (Hedges & Vevea, 1998). Additionally, this model assumes that the observed reliability coefficients represent a random sample drawn from a larger superpopulation of true reliability coefficients. In the random-effects framework, each alpha is weighted by the inverse of its total variance, which comprises both within-study variance and between-study variance. The between-study variance was estimated using the restricted maximum likelihood (REML) method. Finally, 95% confidence intervals for the alpha estimates were calculated following the procedure proposed by Hartung (Sánchez-Meca & Marín-Martínez, 2008).

The next step involves examining the results using a forest plot. The forest plot displays the distribution of alpha coefficients from each study relative to the estimated population alpha. If the individual alphas are widely dispersed, the distribution is considered heterogeneous; conversely, if they cluster closely around the population alpha, the distribution is considered homogeneous. When heterogeneity is observed, it suggests that factors influencing the variation in alpha may be present, which can be further investigated through potential moderator variables. To statistically assess heterogeneity, we conducted the Q homogeneity test (Hedges & Olkin, 1985). This test evaluates the null hypothesis that the reliability coefficients are homogeneous, assuming a chi-square distribution with degrees of freedom equal to $k - 1$, where k represents the number of studies. A p-value less than 0.05 for the Q statistic indicates rejection of the homogeneity hypothesis, suggesting that τ^2 is not equal to zero (Borenstein et al., 2009; Cheung, 2015; Hedges & Olkin, 1985).

In addition to the Q homogeneity test, the I^2 statistic was calculated to quantify the percentage of variability attributable to heterogeneity and to complement the heterogeneity analysis. The I^2 index provides an estimate of the "true" level of heterogeneity in the reliability coefficients, expressed as a percentage (Borenstein et al., 2009). Like the Q test, the I^2 statistic reflects variability arising from differences in study characteristics that may influence the reliability estimates. Conventional benchmarks classify I^2 values of 25%, 50%, and 75% as indicating low, moderate, and substantial heterogeneity, respectively. For example, an I^2 of 50% indicates that half of the total variability among reliability estimates is due to real differences between studies rather than sampling error.

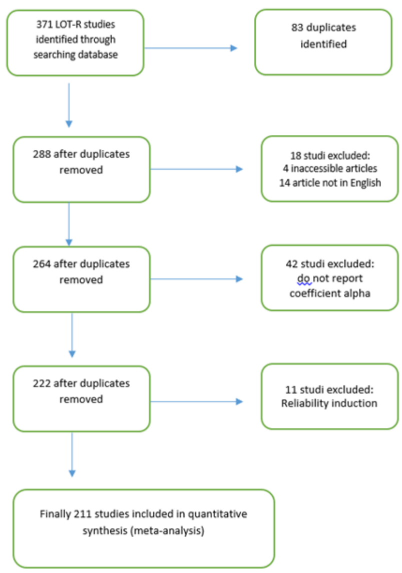
Moderator variable analysis should be conducted if the Q test is significant and the I^2 index indicates at least moderate heterogeneity (≥50%). When there is variability in the reliability coefficients, the weighted mean coefficient may not sufficiently represent the set of reliability estimates, indicating the need for moderator analysis (Karadere et al., 2020). Characteristics of the studies, such as age, gender, study type, and other relevant moderator factors, should be examined using meta-regression analysis, with both continuous and categorical variables handled appropriately. These moderator variables will act as predictors to help explain the variability in alpha coefficients across different studies.

In this study, alpha transformation, the Q statistical test, the I^2 statistic, and meta-regression analysis using a random-effects model were conducted with the open-source software R (JJ Allaire), employing the “metafor” package developed by Wolfgang Viechtbauer. According to Viechtbauer (2020), the metafor package provides a set of functions that enable users to calculate variations in effect sizes or outcome measures, for fixed-effect, random-effects, and mixed models, perform moderator variable analyses, and generate various types of meta-analysis plots. For transparency and reproducibility, the data used in this study are available for viewing and download from the repository at https://doi.org/10.5281/zenodo.8084677.

Results

Study Sample

A total of 371 studies discussing the Revised Life Orientation Test (LOT-R) were identified through a literature search on Google Scholar. After removing 83 duplicates, 288 articles remained for screening (see Figure 1). Following the data-cleaning process, 78 articles were excluded because they did not meet the predefined inclusion criteria. Among these excluded articles, 5% were not in English or Indonesian, 18% were either inaccessible or available only as abstracts, 24% reported reliability from previous studies (induced reliability), 11% did not report the total alpha for LOT-R, and 42% did not report any alpha coefficients at all.



Sources: Personal data (2024).

Figure 1. PRISMA Diagram

A total of 126,026 respondents participated across 211 studies, with individual study sample sizes ranging from 21 to 19,970 participants, and an average of 597 respondents per study. In terms of gender distribution, 78 studies (37%) had a majority of male participants, while 133 studies (63%) had a majority of female participants. Regarding the setting of these studies, 63 studies (29.9%) were conducted in clinical settings, while 148 studies (70.1%) were performed in non-clinical settings. Differences between studies were addressed through careful data grouping and disaggregation, as previously described, and were verified through heterogeneity tests.

With respect to the language of the LOT-R scale, 113 studies (53.6%) used non-English versions (e.g., Greek LOT-R), while 98 studies (46.4%) utilized the English version. For citation background, 168 studies (79.9%) had few citations, 25 studies (11.8%) had a moderate number, and 18 studies (8.5%) had a large number of citations. In terms of the age of respondents, 143 studies (67.8%) included young participants, 46 studies (21.8%) included middle-aged participants, and 22 studies (10.4%) included elderly participants.

Population Alpha and Heterogeneity Test

The estimated population alpha in this study was 0.768, which can be rounded to 0.77. The 95% confidence interval was narrow, ranging from 0.757 (rounded to 0.76) to 0.778 (rounded to 0.78). Referring to the commonly accepted reference value of 0.70 for Cronbach's alpha (Nunnally & Bernstein, 1968), these results indicate that the LOT-R demonstrates satisfactory internal consistency. In other words, based on the aggregation of 211 study samples, the LOT-R scale exhibits good reliability.

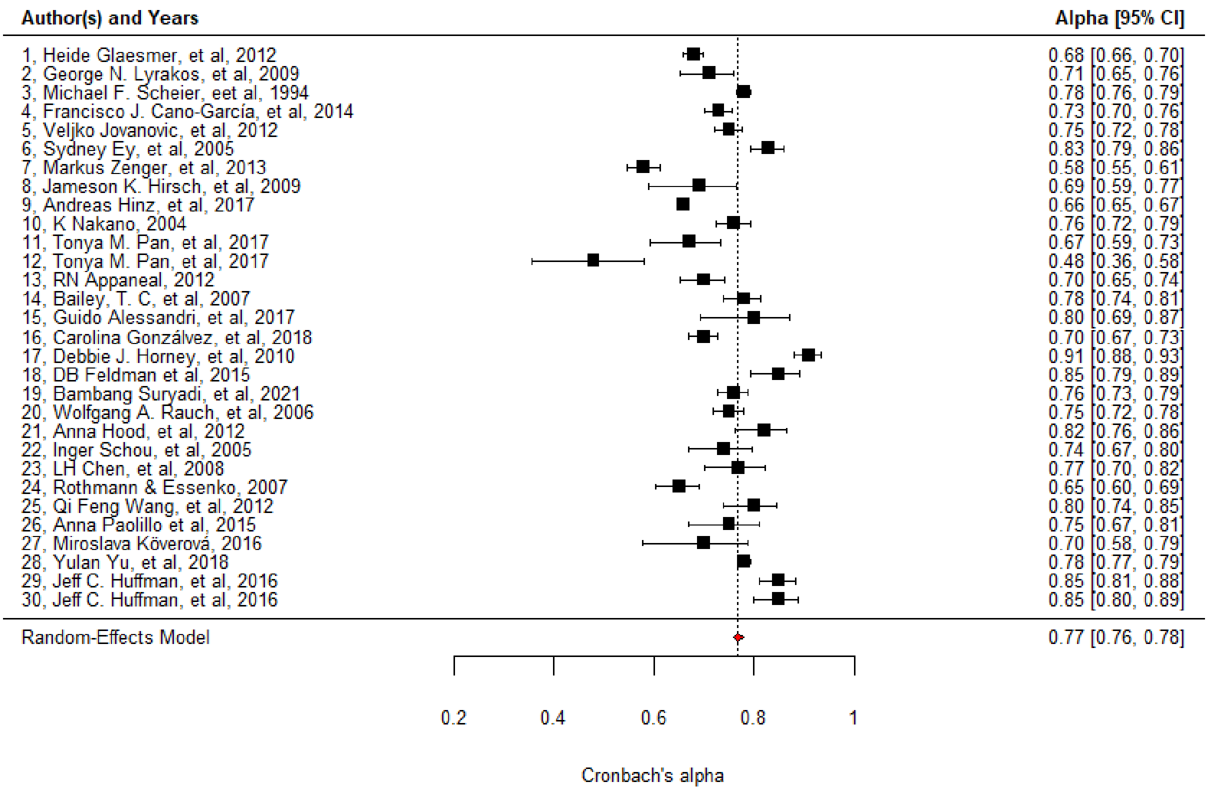


Figure 2. Example Forest Plot of Population and Samples of Transformed Alpha of LOT-R

The heterogeneity of the alpha coefficients across the 211 study samples was assessed using the Q statistic. The Q value was 4,156.35 with 210 degrees of freedom, and the result was statistically significant ($p < 0.001$). A significant Q value leads to the rejection of the null hypothesis, indicating that the alpha coefficients from the 211 studies are heterogeneous. Additionally, the I^2 statistic was computed and resulted in a value of 0.958. This means that 95.8% of the total variability in alpha coefficients can be attributed to differences between the studies, while only 4.2% is due to variation within each study.

The alpha heterogeneity of the 211 study samples is illustrated in the forest plot (see Figure 2). As shown in the forest plot, study number 150 by Drew R. Fowler et al (2016; see appendix in Figure 7) reported the highest alpha coefficient of 0.92, with a 95% confidence interval of 0.91 to 0.93. In contrast, study number 12 by Tonya M. Pan et al. (2017) reported the lowest alpha of 0.48, with a 95% confidence interval of 0.44 to 0.51. The widest 95% confidence interval was observed in the study by S. Ho et al. (2011), with an alpha of 0.66 and a confidence interval ranging from 0.47 to 0.78, followed by Claire Coloni-Terrapon et al. (2013), which reported an alpha of 0.76 and a 95% confidence interval of 0.57 to 0.87. The 95% confidence interval indicates the range within which the true alpha coefficient is expected to lie with 95% confidence. A narrower interval suggests a more precise estimate of the alpha coefficient.

The analysis was further extended by constructing a funnel plot (see Figure 3) to assess potential publication bias. The funnel plot appeared relatively symmetrical and flat, a finding supported by the Egger regression test ($Q = 4,156.35$; $p < 0.001$). However, it is important to note that, according to Mullen et al. (2001), cumulative meta-analysis results can be considered robust against publication bias if the value of $N / (5k + 10)$ exceeds 1, where N is the total sample size and k is the number of studies. In this study, the calculation yielded 118.3 [$126,026 / (211 \times 5 + 10)$], suggesting that the likelihood of publication bias is very low. Additionally, to complement the Egger regression test, the trim-and-fill method was applied to evaluate further publication bias (Duval & Tweedie, 2000; Shi & Lin, 2019). This analysis indicated no missing studies on the left side of the funnel plot (estimated missing studies = 0, SE = 8.3985), confirming that asymmetry was not significantly detected (see Figure 2).

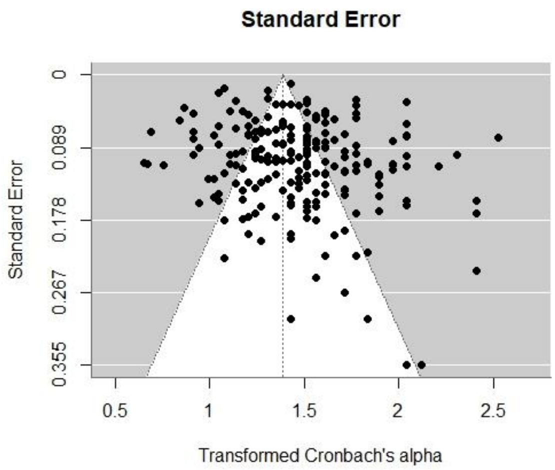


Figure 3. Trim and Fill Funnel Plot

These findings suggest that the low risk of publication bias enhances the accuracy of the results, as there is no systematic tendency to include only studies with significant findings. Moreover, with minimal indication of bias, the effects reported in this meta-analysis are likely to represent the true reliability of the LOT-R scale, without inflation or exaggeration. Consequently, the results of this meta-analysis can be confidently used to inform policy decisions and guide future research.

As presented earlier, the analysis revealed a significant Q-value, leading to the rejection of the null hypothesis. This indicates the presence of heterogeneity among the alpha coefficients, as further illustrated by the I^2 value, which shows that 95.8% of the total variation is attributable to differences between studies. Given this heterogeneity, it is necessary to explore variables that may contribute to the observed variability. In this study, the selected moderator variables included gender, study type, age, study setting, citation frequency, and language.

Table 1. Meta-Regression Results Using Mixed-Effect Model

Moderator Variables	B	SE	Z	Confidence Interval 95%		P-value
				Lower	Upper	
Intercept	1,483	0,091	16,244	1,304	1,661	<,0001
Percent Female	-0,020	0,045	-0,444	-0,108	0,068	0,657
Age	-0,001	0,002	-0,503	-0,004	0,002	0,615
Citation	0,015	0,037	0,392	-0,058	0,087	0,695
Type of Study	-0,069	0,048	-1,440	-0,163	0,025	0,150
Setting of Study	-0,088	0,058	-1,525	-0,201	0,025	0,127
Language	0,214	0,046	4,691	0,125	0,303	<,0001

Sources: Personal data (2024).

The effects of various moderator variables on the alpha coefficients are summarized in Table 1. A meta-regression analysis was conducted using a mixed-effects model. The results revealed that only the language variable had a statistically significant impact on the heterogeneity of alpha coefficients ($p < 0.0001$), with a coefficient of 0.214 and a 95% confidence interval ranging from 0.125 to 0.303. This finding indicates that studies conducted in different languages exhibit significantly different reliability estimates. In contrast, none of the other moderator variables—proportion of female participants, age, citation frequency, study type, and study setting—showed a significant effect ($p > 0.05$). When all moderator variables were set to zero, the model intercept was 1.483, which is statistically significant, suggesting a substantial baseline effect.

Discussion

The Life Orientation Test Revised (LOT-R) is a widely used instrument for measuring individual optimism and has been employed in studies across many countries. Nearly all studies using the LOT-R reported its reliability, with Cronbach's alpha serving as the primary focus of this research. Reporting the reliability coefficient is essential for any measurement instrument, particularly for well-established tools like the LOT-R, to ensure the consistency and trustworthiness of the obtained scores.

The analysis revealed substantial heterogeneity, with a significant Q-statistic and an I^2 value of 95%, indicating considerable variation in alpha coefficients across studies, as shown in the forest plot. As a result, the null hypothesis (H_0), which posits no variation in alpha coefficients across the 211 LOT-R studies, was rejected, while the alternative hypothesis (H_1), indicating the presence of variability, was accepted. To explore potential sources of this variability, six study-level moderator variables were examined: age, study type, study setting, citation frequency, gender, and scale language. Meta-regression analysis indicated that only the language variable had a statistically significant effect on the heterogeneity

The LOT-R was originally developed in English, which poses challenges when translated into other languages. Translation may alter item meaning due to differences in grammar, nuances, and complexity, potentially affecting respondents' understanding and response patterns. Additionally, cultural interpretations of optimism can vary, with some contexts emphasizing social norms and others individual perspectives, leading to differences in response tendencies. These factors contribute to variability in LOT-R reliability across studies.

While language significantly influences reliability, other factors such as cultural context, socioeconomic background, and publication type may also play a role. To address these sources of heterogeneity, future research should employ rigorous adaptation procedures (e.g., back-translation, cross-cultural validation), assess measurement invariance across languages, and examine cultural response styles. Methods such as Differential Item Functioning (DIF) testing (Zumbo, 1999) and COSMIN guidelines (Mokkink et al., 2010) can ensure that the LOT-R measures optimism consistently across linguistic and cultural contexts.

Conclusion

The results of this study indicated that the LOT-R has adequate reliability, with a population alpha of 0.768. This suggests that approximately 76.8% of the variance in observed scores reflects true score variance, while the remaining 23.2% is attributable to measurement error. Knowing this population alpha provides users with a benchmark for the general reliability of the LOT-R. However, it is important for future research to prioritize rigorous translation and validation processes to maintain reliability across different languages. This study shows that language differences can affect Cronbach's alpha, with higher reliability observed in scales using the original language. Therefore, translations should not only follow a rigorous linguistic procedure but also incorporate cultural aspects to ensure that the concept of optimism is accurately conveyed in accordance with local contexts. By involving both language and cultural experts, adapted LOT-R scores can remain consistent with the original scale.

Future research could consider using other alpha transformations, such as those proposed by Hakstian and Whalen (Rodriguez & Maeda, 2006), or analyzing raw alpha scores without transformation (Vacha-Haase, 1998) to examine potential differences. Additionally, it is important to explore other study-level moderator variables that may influence the variability of LOT-R reliability estimates and to expand the meta-analysis to include more studies beyond the current 211 articles.

Acknowledgment

The researchers are sincerely grateful to the Faculty of Psychology at UIN Syarif Hidayatullah and Bina Nusantara University for their assistance and support in conducting this research.

Conflict of Interest

There is no conflict of interest regarding the publication of this research. All data and findings in this study have been examined and presented objectively, without influence or bias. This study was conducted solely for academic and scientific purposes.

Authors Contribution

WS: Designing the research, writing the script, finding and analyzing the data, and finalization. **BH**: Supervision, manuscript writing, revision, manuscript editing, finalization

References

Abele, A. E., & Gendolla, G. H. E. (2007). Individual differences in optimism predict the recall of personally relevant information. *Personality and Individual Differences, 43*(5), 1125–1135. https://doi.org/10.1016/j.paid.2007.03.005

Afolabi, O. A., & Dennis, U. (2019). Reciprocal altruism: It's relationship to locus of control and dispositional optimism among Nigerian undergraduates. *Journal of Psychology in Africa (South of the Sahara, the Caribbean, and Afro-Latin America)*, *29*(2), 155–158. doi:10.1080/14330237.2019.1594652

Alexander, V. E., Bartrum, D. A., & Hicks, R. E. (2014). Emotional intelligence and optimistic cognitive style in certainty in career decision making. *GSTF Journal of Psychology*, *1*(2). https://doi.org/10.5176/2345-7872_1.2.15

Alessandri, G., De Pascalis, V. Double dissociation between the neural correlates of the general and specific factors of the Life Orientation Test–Revised. *Cogn Affect Behav Neurosci* **17**, 917–931 (2017). https://doi.org/10.3758/s13415-017-0522-z

Alessandri, G., Vecchione, M., Tisak, J., & Barbaranelli, C. (2011). Investigating the Nature of Method Factors Through Multiple Informants: Evidence for a Specific Factor?. *Multivariate behavioral research*, *46*(4), 625–642. https://doi.org/10.1080/00273171.2011.589272

Antúnez, J. M., Navarro, J. F., & Adan, A. (2015). Circadian typology is related to resilience and optimism in healthy adults. *Chronobiology international*, *32*(4), 524–530. https://doi.org/10.3109/07420528.2015.1008700

Andersen, S. A. W., Nayahangan, L. J., Park, Y. S., & Konge, L. (2021). Use of Generalizability Theory for Exploring Reliability of and Sources of Variance in Assessment of Technical Skills: A Systematic Review and Meta-Analysis. Academic Medicine : Journal of the Association of American Medical Colleges, 96(11), 1609–1619. https://doi.org/10.1097/ACM.0000000000004150

Appaneal, R. N. (2012). A Confirmatory Factor Analysis of the Life Orientation Test—Revised With Competitive Athletes. *Research Quarterly for Exercise and Sport*, *83*(4), 592–596. https://doi.org/10.1080/02701367.2012.10599885

Avalos, L., Tylka, T. L., & Wood-Barcalow, N. (2005). The Body Appreciation Scale: development and psychometric evaluation. *Body image*, *2*(3), 285–297. https://doi.org/10.1016/j.bodyim.2005.06.002

Bailey, T. C., Eng, W., Frisch, M. B., & Snyder, C. R. (2007) Hope and Optimism as Related to Life Satisfaction. The Journal of Positive Psychology, 2, 168-175. https://doi.org/10.1080/17439760701409546

Balsamo, M., Imperatori, C., Sergi, M. R., Belvederi Murri, M., Continisio, M., Tamburello, A., Innamorati, M., & Saggino, A. (2013). Cognitive Vulnerabilities and Depression in Young Adults: An ROC Curves Analysis. *Depression research and treatment*, *2013*, 407602. https://doi.org/10.1155/2013/407602

Bargiel-Matusiewicz, K., & Krzyszkowska, A. (2009). Dispositional optimism and coping with pain. *European journal of medical research*, *14 Suppl 4*(Suppl 4), 271–274. https://doi.org/10.1186/2047-783x-14-s4-271

Barnett, M.D., & Adams, C.M. (2018). Ageism and aging anxiety among young adults: relationships with contact, knowledge, fear of death, and optimism. *Educational Gerontology, 44*, 693 - 700.

Benediktsson, I., McDonald, S., & Tough, S. (2017). Examining the Psychometric Properties of Three Standardized Screening Tools in a Pregnant and Parenting Population. *Maternal and child health journal*, *21*(2), 253–259. https://doi.org/10.1007/s10995-016-2128-4

Black, J., & Reynolds, W. M. (2013). Examining the relationship of perfectionism, depression, and optimism: Testing for mediation and moderation. *Personality and Individual Differences, 54*(3), 426–431. https://doi.org/10.1016/j.paid.2012.10.012

Bollen, K. A. (1989). Structural Equations with Latent Variables. In John Wiley & Sons, Inc.

Bonett, D. G. (2002). Sample size requirements for testing and estimating coefficient alpha. *Journal of Educational and Behavioral Statistics*, *27*(4), 335–340. https://doi.org/10.3102/10769986027004335

Bonett, D. G. (2010). Varying Coefficient Meta-Analytic Methods for Alpha Reliability. Psychological Methods, 15(4), 368–385. https://doi.org/10.1037/a0020142

Borenstein, M., Hedges, L. V., Higgins, J. P. ., & Rothstein, H. R. (2009). Introduction to Meta-Analysis. In John Wiley & Sons, Ltd. https://doi.org/10.1007/978-3-319-14908-0_2

Botella, J., Suero, M., & Gambara, H. (2010). Psychometric Inferences From a Meta-Analysis of Reliability and Internal Consistency Coefficients. Psychological Methods, 15(4), 386–397. https://doi.org/10.1037/a0019626

Bozo, O., Gündogdu, E., & Büyükasik-Colak, C. (2009). The moderating role of different sources of perceived social support on the dispositional optimism-- posttraumatic growth relationship in postoperative breast cancer patients. *Journal of health psychology*, *14*(7), 1009–1020. https://doi.org/10.1177/1359105309342295

Burešová, I., Jelínek, M., Dosedlová, J., & Klimusová, H. (2020). Predictors of Mental Health in Adolescence: The Role of Personality, Dispositional Optimism, and Social Support. *Sage Open*, *10*(2). https://doi.org/10.1177/2158244020917963 (Original work published 2020)

Bretherton, S. J., & McLean, L. A. (2014). Mediating effects of perceived control in the relationship between optimism and adjustment in parents of children with disabilities. *Journal of Developmental and Physical Disabilities, 26*(3), 357–369. https://doi.org/10.1007/s10882-014-9371-7

Broekhof, R., Rius-Ottenheim, N., Spinhoven, P., van der Mast, R. C., Penninx, B. W., Zitman, F. G., & Giltay, E. J. (2015). Long-lasting effects of affective disorders and childhood trauma on dispositional optimism. *Journal of affective disorders*, *175*, 351–358. https://doi.org/10.1016/j.jad.2015.01.022

Card, N. A. (2012). Applied Meta-Analysis for Social Science Research (T. D. Little (ed.); 1st ed.). The Guilford Press.

Calandri, E., Graziano, F., Borghi, M., & Bonino, S. (2017). Improving the quality of life and psychological well-being of recently diagnosed multiple sclerosis patients: preliminary evaluation of a group-based cognitive behavioral intervention. *Disability and rehabilitation*, *39*(15), 1474–1481. https://doi.org/10.1080/09638288.2016.1198430

Calderon, C., Carmona-Bayonas, A., Hernández, R., Ghanem, I., Castelo, B., Martinez de Castro, E., Ferreira, E., Ciria, L., Muñiz, M., & Jimenez-Fonseca, P. (2019). Effects of pessimism, depression, fatigue, and pain on functional health-related quality of life in patients with resected non-advanced breast cancer. *Breast (Edinburgh, Scotland)*, *44*, 108–112. https://doi.org/10.1016/j.breast.2019.01.012

Cano-García, F. J., Sanduvete-Chaves, S., Chacón-Moscoso, S., Rodríguez-Franco, L., García-Martínez, J., Antuña-Bellerín, M. A., & Pérez-Gil, J. A. (2015). Factor structure of the Spanish version of the Life Orientation Test-Revised (LOT-R): Testing several models. *International Journal of Clinical and Health Psychology: IJCHP*, *15*(2), 139–148. doi:10.1016/j.ijchp.2015.01.003

Cattelino, E., Graziano, F., & Calandri, E. (2014). The mediating role of romantic relationships between optimism and depression in emerging adults. *Problems of Psychology in the 21st Century*, *8*(1), 6–15. doi:10.33225/ppc/14.08.06

Celano, C. M., Gomez-Bernal, F., Mastromauro, C. A., Beale, E. E., DuBois, C. M., Auerbach, R. P., & Huffman, J. C. (2020). A positive psychology intervention for patients with bipolar depression: a randomized pilot trial. *Journal of mental health (Abingdon, England)*, *29*(1), 60–68. https://doi.org/10.1080/09638237.2018.1521942

Chang, E. C. (1998b). Does dispositional optimism moderate the relation between perceived stress and psychological well-being?: A preliminary investigation. Personality and Individual Differences, 25, 1109-1120. doi:10.1016/S0191-8869(98)00028-2

Chakraborty, R. (2016). Dimensional Analysis of the Academic Motivation Scale with Respect to Gender in Secondary School Students with Neural Basis in Indian Context. *iJARS International Journal of Humanities and Social Studies*, *2*(2). https://doi.org/10.20908/ijarsijhss.v2i2.9584

Charyton, C., Hutchison, S., Snow, L., Rahman, M. A., & Elliott, J. O. (2009). Creativity as an Attribute of Positive Psychology: The Impact of Positive and Negative Affect on the Creative Personality. *Journal of Creativity in Mental Health*, *4*(1), 57–66. https://doi.org/10.1080/15401380802708791

Chen, L.H., Chen, MY., Kee, Y.H. *et al.* Validation of the Gratitude Questionnaire (GQ) in Taiwanese Undergraduate Students. *J Happiness Stud* **10**, 655–664 (2009). https://doi.org/10.1007/s10902-008-9112-7

Cheung, M. W. (2015). Meta-Analysis A Structural Equation Modeling Approach (First). John Wiley & Sons Ltd.

Chiesi, F., Galli, S., Primi, C., Innocenti Borgi, P., & Bonacchi, A. (2013). The accuracy of the Life Orientation Test-Revised (LOT-R) in measuring dispositional optimism: Evidence from item response theory analyses. Journal of Personality Assessment, 95(5), 523–529. https://doi.org/10.1080/00223891.2013.781029

Coloni-Terrapon, C., Favrod, J., Clément-Perritaz, A., Gothuey, I., & Rexhaj, S. (2019). Optimism and the psychological recovery process among informal caregivers of inpatients suffering from depressive disorder: A descriptive exploratory study. *Frontiers in Psychiatry*, *10*, 972. doi:10.3389/fpsyt.2019.00972

Contreras, F., Dreu, I. de, & Espinosa, J. C. (2017). Examining the relationship between Psychological Capital and Entrepreneurial Intention: An exploratory study. *Asian Social Science*, *13*(3), 80. doi:10.5539/ass.v13n3p80

Cripe, L. D., Rand, K. L., Perkins, S. M., Tong, Y., Schmidt, K. K., Hedrick, D. G., & Rawl, S. M. (2018). Ambulatory Advanced Cancer Patients' and Oncologists' Estimates of Life Expectancy Are Associated with Patient Psychological Characteristics But Not Chemotherapy Use. *Journal of palliative medicine*, *21*(8), 1107–1113. https://doi.org/10.1089/jpm.2017.0686

Creed, P. A., Patton, W., & Bartrum, D. (2002). Multidimensional properties of the LOT-R: Effects of optimism and pessimism on career and well-being related variables in adolescents. *Journal of Career Assessment, 10*(1), 42–61. https://doi.org/10.1177/1069072702010001003

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16(3), 297–334. https://doi.org/10.1007/BF02310555

Dawson, M., & Pooley, J. A. (2013). Resilience: The role of optimism, perceived parental autonomy support and perceived social support in first year university students. *Journal of Education and Training Studies*, *1*(2). doi:10.11114/jets.v1i2.137

Day, L., & Maltby, J. (2005). "With Good Luck": Belief in good luck and cognitive planning. *Personality and Individual Differences*, *39*(7), 1217–1226. doi:10.1016/j.paid.2005.04.011

De Pascalis, V., Cozzuto, G., Caprara, G. V., & Alessandri, G. (2013). Relations among EEG-alpha asymmetry, BIS/BAS, and dispositional optimism. *Biological psychology*, *94*(1), 198–209. https://doi.org/10.1016/j.biopsycho.2013.05.016

Díaz, A., Ponsoda, J. M., & Beleña, A. (2020). Optimism as a key to improving mental health in family caregivers of people living with Alzheimer's disease. *Aging & mental health*, *24*(10), 1662–1670. https://doi.org/10.1080/13607863.2020.1715342

Dibb, B., & Yardley, L. (2006). How does social comparison within a self-help group influence adjustment to chronic illness? A longitudinal study. *Social science & medicine (1982)*, *63*(6), 1602–1613. https://doi.org/10.1016/j.socscimed.2006.03.031

Donnelly, R., Renk, K., & McKinney, C. (2013). Emerging adults' stress and health: the role of parent behaviors and cognitions. *Child psychiatry and human development*, *44*(1), 19–38. https://doi.org/10.1007/s10578-012-0309-y

Dorstyn, D., Roberts, R., Murphy, G., Kneebone, I., Migliorini, C., Craig, A., Hutchinson, C., & Field, D. (2017). Piloting an email-based resource package for job seekers with multiple sclerosis. *Disability and rehabilitation*, *39*(9), 867–873. https://doi.org/10.3109/09638288.2016.1161847

Duval, S., & Tweedie, R. (2000). Trim and fill: A simple funnel-plot-based method of testing and adjusting for publication bias in meta-analysis. Biometrics, 56(2), 455–463. https://doi.org/10.1111/j.0006-341x.2000.00455.x

Elkady, A. A. M. (2019). Comparative Study of Self-transcendence, Spiritual Wellbeing, Optimism and Meaning in Life among Retirees and Post-retirement Employees. *Psycho-Educational Research Reviews*, *8*(2), 85 – 94. Retrieved from https://perrjournal.com/index.php/perrjournal/article/view/163

Eid, J., Meland, N. T., Matthews, M. D., & Johnsen, B. H. (2005). Dispositional Optimism and Self-Assessed Situation awareness in a Norwegian military training exercise. *Perceptual and Motor Skills*, *100*(3), 649–658. https://doi.org/10.2466/pms.100.3.649-658

Extremera, N., Durán, A. and Rey, L. (2009) The Moderating Effect of Trait Meta-Mood and Perceived Stress on Life Satisfaction. Personality & Individual Differences, 47, 116-121.

Ey, S., Hadley, W., Allen, D.N., Palmer, S., Klosky, J., Deptula, D., Thomas, J. and Cohen, R. (2005), A new measure of children's optimism and pessimism: the youth life orientation test. Journal of Child Psychology and Psychiatry, 46: 548-558. https://doi.org/10.1111/j.1469-7610.2004.00372.x

Fang, W., Zhang, Y., Mei, J., Chai, X., & Fan, X. (2018). Relationships between optimism, educational environment, career adaptability and career motivation in nursing undergraduates: A cross-sectional study. *Nurse education today*, *68*, 33–39. https://doi.org/10.1016/j.nedt.2018.05.025

Feldman, D. B., & Kubota, M. (2015). Hope, self-efficacy, optimism, and academic achievement: Distinguishing constructs and levels of specificity in predicting college grade-point average. *Learning and Individual Differences*, *37*, 210–216. doi:10.1016/j.lindif.2014.11.022

Fitzpatrick K. M. (2017). How Positive Is Their Future? Assessing the Role of Optimism and Social Support in Understanding Mental Health Symptomatology among Homeless Adults. *Stress and health : journal of the International Society for the Investigation of Stress*, *33*(2), 92–101. https://doi.org/10.1002/smi.2676

Fontaine, K. R., & Shaw, D. F. (1995). Effects of self-efficacy and dispositional optimism on adherence to step aerobic exercise classes. *Perceptual and motor skills*, *81*(1), 251–255. https://doi.org/10.2466/pms.1995.81.1.251

Foster, B., Razon, S., Blom, L., & Holden, J. (2015). *Optimism and Female Volleyball Players' Perceptions of Psychological Momentum* (1–). The Journal of SPORT. https://doi.org/10.21038/sprt.2015.0411

Fowler, D. R., Weber, E. N., Klappa, S. P., & Miller, S. A. (2017). Replicating future orientation: Investigating the constructs of hope and optimism and their subscales through replication and expansion. *Personality and Individual Differences*, *116*, 22–28. doi:10.1016/j.paid.2017.04.010

Fu, S. Y., Anderson, D., Courtney, M., & Hu, W. (2007). The relationship between culture, attitude, social networks and quality of life in midlife Australian and Taiwanese citizens. *Maturitas*, *58*(3), 285–295. https://doi.org/10.1016/j.maturitas.2007.08.017

Garcia Cadena, C. H., Diaz, H. L., & Caycho-Rodríguez, T. (2021). The Construct, Convergent and Divergent Validity, and Reliability of Three Optimism Scales among North American University Students. *Psychological reports*, *124*(3), 1412–1430. https://doi.org/10.1177/0033294120933144

Geers, A. L., Wellman, J. A., Fowler, S. L., Helfer, S. G., & France, C. R. (2010). Dispositional optimism predicts placebo analgesia. *The journal of pain*, *11*(11), 1165–1171. https://doi.org/10.1016/j.jpain.2010.02.014

Gila-Díaz, A., Carrillo, G. H., De Pablo, Á. L. L., Arribas, S. M., & Ramiro-Cortijo, D. (2020). Association between Maternal Postpartum Depression, Stress, Optimism, and Breastfeeding Pattern in the First Six Months. *International Journal of Environmental Research and Public Health*, *17*(19), 7153. https://doi.org/10.3390/ijerph17197153

Glaesmer, H., Rief, W., Martin, A., Mewes, R., Brähler, E., Zenger, M., & Hinz, A. (2012). Psychometric properties and population-based norms of the Life Orientation Test Revised (LOT-R). *British journal of health psychology*, *17*(2), 432–445. https://doi.org/10.1111/j.2044-8287.2011.02046.x

Gonzálvez, C., Inglés, C.J., Sanmartín, R. *et al.* Youth Life Orientation Test-Spanish Version: Factorial Invariance, Latent Mean Differences and Effects on School Refusal. *School Mental Health* **10**, 477–487 (2018). https://doi.org/10.1007/s12310-018-9266-3

Goodin, B. R., Glover, T. L., Sotolongo, A., King, C. D., Sibille, K. T., Herbert, M. S., Cruz-Almeida, Y., Sanden, S. H., Staud, R., Redden, D. T., Bradley, L. A., & Fillingim, R. B. (2013). The association of greater dispositional optimism with less endogenous pain facilitation is indirectly transmitted through lower levels of pain catastrophizing. *The journal of pain*, *14*(2), 126–135. https://doi.org/10.1016/j.jpain.2012.10.007

Greco, L. M., O'Boyle, E. H., Cockburn, B. S., & Yuan, Z. (2018). Meta-Analysis of Coefficient Alpha: A Reliability Generalization Study. Journal of Management Studies, 55(4), 583–618. https://doi.org/10.1111/joms.12328

Groarke, A., Curtis, R., & Kerin, M. (2013). Global stress predicts both positive and negative emotional adjustment at diagnosis and post-surgery in women with breast cancer. *Psycho-oncology*, *22*(1), 177–185. https://doi.org/10.1002/pon.2071

Gudmundsson, E. (2009). Guidelines for translating and adapting psychological instruments. Nordic Psychology, 61(2), 29–45. https://doi.org/10.1027/1901-2276.61.2.29

Guicciardi, M., & Pazzona, R. (2020). The rebooting in sports and physical activities after COVID-19 Italian lockdown: An exploratory study. *Frontiers in Psychology, 11,* Article 607233. https://doi.org/10.3389/fpsyg.2020.607233

Guillen, F., & Laborde, S. (2014). Higher-order structure of mental toughness and the analysis of latent mean differences between athletes from 34 disciplines and non-athletes. *Personality And Individual Differences*, *60*(April), 30-35. https://doi.org/10.1016/j.paid.2013.11.019

Gunnarsson, S., Alehagen, S., Lemming, D., Ertzgaard, P., Ghaderi Berntsson, S., & Samuelsson, K. (2019). Experiences from intrathecal baclofen treatment based on medical records and patient- and proxy-reported outcome: a multicentre study. *Disability and rehabilitation*, *41*(9), 1037–1043. https://doi.org/10.1080/09638288.2017.1419291

Gustavsson-Lilius, M., Julkunen, J., Keskivaara, P., Lipsanen, J., & Hietanen, P. (2012). Predictors of distress in cancer patients and their partners: the role of optimism in the sense of coherence construct. *Psychology & health*, *27*(2), 178–195. https://doi.org/10.1080/08870446.2010.484064

Gustems-Carnicer, J., Calderón, C., & Forn Santacana, M. (2017). Psychometric properties of the Life Orientation Test (LOT-R) and its relationship with psychological well-being and academic progress in college students. *Revista Latinoamericana de Psicologia*, *49*(1), 19–27. doi:10.1016/j.rlp.2016.05.001

Guszkowska, M., Langwald, M., Dudziak, D., & Zaremba, A. (2013). Influence of a single physical exercise class on mood states of pregnant women. *Journal of psychosomatic obstetrics and gynaecology*, *34*(2), 98–104. https://doi.org/10.3109/0167482X.2013.767794

Hanley, S. M., Bhullar, N., & Wootton, B. M. (2021). Development and initial validation of the body dysmorphic disorder scale for youth. *Clinical Psychologist*, *24*(3), 254-266. https://doi.org/10.1111/cp.12225

Hanssen, M. M., Peters, M. L., Vlaeyen, J. W. S., Meevissen, Y. M. C., & Vancleef, L. M. G. (2013). Optimism lowers pain: evidence of the causal status and underlying mechanisms. *Pain*, *154*(1), 53–58. https://doi.org/10.1016/j.pain.2012.08.006

Hayat, B. (2024). Meta-analysis of coefficient alpha: Empirical demonstration using English Language Teaching Reflection Inventory. J. Curric. Teach., 13(2), 231. https://doi.org/10.5430/jct.v13n2p231

Handelzalts, J. E., Zacks, A., & Levy, S. (2016). The association of birth model with resilience variables and birth experience: Home versus hospital birth. *Midwifery*, *36*, 80–85. https://doi.org/10.1016/j.midw.2016.03.005

He, F., Zhou, Q., Zhao, Z., Zhang, Y., & Guan, H. (2016). Effect of perceived social support and dispositional optimism on the depression of burn patients. *Journal of health psychology*, *21*(6), 1119–1125. https://doi.org/10.1177/1359105314546776

Hedges, L. V., & Olkin, I. (1985). Statistical Methods for Meta Analysis. In Academic Press, Inc. https://doi.org/10.1080/00224065.1985.11978976

Hedges, L. V., & Vevea, J. L. (1998). Fixed- and Random-Effects Models in Meta-Analysis. Psychological Methods, 3(4), 486–504. https://doi.org/10.1037/1082-989X.3.4.486

Heinonen, K., Raikkonen, K., & Keltikangas-Jarvinen, L. (2005). Self-Esteem in Early and Late Adolescence Predicts Dispositional Optimism-Pessimism in Adulthood: A 21-Year Longitudinal Study. Personality and Individual Differences, 39, 511-521. http://dx.doi.org/10.1016/j.paid.2005.01.026

Herero, V. G., & Extremera, N. (2010). Daily life activities as mediators of the relationship between personality variables and subjective well-being among older adults. *Personality and Individual Differences, 49*(2), 124–129. https://doi.org/10.1016/j.paid.2010.03.019

Henson, R. K., & Thompson, B. (2002). Characterising Measurement Error in Scores Across Studies: Some Recommendations for Conducting "Reliability Generalization" Studies. Measurement and Evaluation in Counseling and Development, 1756. https://doi.org/10.1080/07481756.2002.12069054

Higgins, J. P. T., & Green, S. (2008). Cochrane Handbook for Systematic Reviews of Interventions. In The Cochrane Collaboration. https://doi.org/10.1001/archinte.1992.00400170067013

Hjelle, L. A., Busch, E. A., & Warren, J. E. (1996). Explanatory style, dispositional optimism, and reported parental behavior. *The Journal of genetic psychology*, *157*(4), 489–499. https://doi.org/10.1080/00221325.1996.9914881

Ho, S., Rajandram, R. K., Chan, N., Samman, N., McGrath, C., & Zwahlen, R. A. (2011). The roles of hope and optimism on posttraumatic growth in oral cavity cancer patients. *Oral oncology*, *47*(2), 121–124. https://doi.org/10.1016/j.oraloncology.2010.11.015

Hood, A., Pulvers, K., Carrillo, J., Merchant, G., & Thomas, M. (2012). Positive traits linked to less pain through lower pain catastrophizing. *Personality and Individual Differences*, *52*(3), 401–405. doi:10.1016/j.paid.2011.10.040

Hinz, A., Klein, A. M., Brähler, E., Glaesmer, H., Luck, T., Riedel-Heller, S. G., Wirkner, K., & Hilbert, A. (2017). Psychometric evaluation of the Generalized Anxiety Disorder Screener GAD-7, based on a large German general population sample. *Journal of affective disorders*, *210*, 338–344. https://doi.org/10.1016/j.jad.2016.12.012

Hirsch, J. K., Wolford, K., Lalonde, S. M., Brunk, L., & Parker-Morris, A. (2009). Optimistic explanatory style as a moderator of the association between negative life events and suicide ideation. *Crisis*, *30*(1), 48–53. https://doi.org/10.1027/0227-5910.30.1.48

Hirsch, J. K., Walker, K. L., Wilkinson, R. B., & Lyness, J. M. (2014). Family criticism and depressive symptoms in older adult primary care patients: optimism and pessimism as moderators. *The American journal of geriatric psychiatry : official journal of the American Association for Geriatric Psychiatry*, *22*(6), 632–635. https://doi.org/10.1016/j.jagp.2013.04.008

Horney, D.J., Smith, H.E., McGurk, M., Weinman, J., Herold, J., Altman, K. and Llewellyn, C.D. (2011), Associations between quality of life, coping styles, optimism, and anxiety and depression in pretreatment patients with head and neck cancer. Head Neck, 33: 65-71. https://doi.org/10.1002/hed.21407

Howell, J., & Maguire, R. (2019). Seeking help when transgender: Exploring the difference in mental and physical health seeking behaviors between transgender and cisgender individuals in Ireland. *The international journal of transgenderism*, *20*(4), 421–433. https://doi.org/10.1080/15532739.2019.1658145

Huffman, J. C., Legler, S., Millstein, R. A., Gomez-Bernal, F., Celano, C. M., Chung, W. J., & Healy, B. C. (2019). Does timeframe adjustment of the Life Orientation Test-Revised assess optimism as a state? *The Journal of Positive Psychology*, *14*(6), 799–806. https://doi.org/10.1080/17439760.2019.1579355

Igbokwe, D., et al. (2016). *Revalidation of Some Measures of Psychological Wellbeing Using a Cross Section of Nigerian Adults*. *4*, 572–593.

Jibeen, T. (2014). Personality traits and subjective well-being: Moderating role of optimism in university employees. *Social Indicators Research*, *118*(1), 157–172. doi:10.1007/s11205-013-0416-6

Jimenez-Fonseca P, Calderón C, Hernández R, et al. Factors associated with anxiety and depression in cancer patients prior to initiating adjuvant therapy. Clinical & Translational Oncology : Official Publication of the Federation of Spanish Oncology Societies and of the National Cancer Institute of Mexico. 2018 Nov;20(11):1408-1415. DOI: 10.1007/s12094-018-1873-9. PMID: 29651672.

Jovanović, V., Gavrilov-Jerković, V. Dimensionality and Validity of the Serbian Version of the Life Orientation Test-Revised in a Sample of Youths. *J Happiness Stud* **14**, 771–782 (2013). https://doi.org/10.1007/s10902-012-9354-2

Kam, C., & Meyer, J. P. (2012). Do optimism and pessimism have different relationships with personality dimensions? A re-examination. *Personality and Individual Differences, 52*(2), 123–127. https://doi.org/10.1016/j.paid.2011.09.011

Karadere, G., Wedderhoff, N., & Bosnjak, M. (2020). Reliability Generalization of three frequently used Open Access Measures : MAAS , SEK-27 , and PSQ (pp. 1–35).

Karademas, E.C., Kafetsios, K., & Sideridis, G.D. (2007). Optimism, self-efficacy and information processing of threat- and well-being-related stimuli. *Stress and Health, 23*, 285-294.

Khallad Y. (2013). Dispositional optimism and physical wellbeing: the relevance of culture, gender, and socioeconomic status. *International journal of psychology : Journal international de psychologie*, *48*(5), 978–985. https://doi.org/10.1080/00207594.2012.695795

Kleiman, E. M., Chiara, A. M., Liu, R. T., Jager-Hyman, S. G., Choi, J. Y., & Alloy, L. B. (2017). Optimism and well-being: a prospective multi-method and multi-dimensional examination of optimism as a resilience factor following the occurrence of stressful life events. *Cognition & emotion*, *31*(2), 269–283. https://doi.org/10.1080/02699931.2015.1108284

Klomp, M. H. M. (2016). The relationship between Dispositional Optimism, Pain Experience and Pain anticipation. *MaRBLe*, *6*. doi:10.26481/marble.2015.v6.383

Knowlden, A. P., Hackman, C. L., & Sharma, M. (2015). Lifestyle and mental health correlates of psychological distress in college students. *Health Education Journal*, *75*(3), 370-382. https://doi.org/10.1177/0017896915589421 (Original work published 2016)

Koliouli, F., & Canellopoulos, L. (2021). Dispositional optimism, stress, post-traumatic stress disorder and post-traumatic growth in Greek general population facing the COVID-19 crisis. *European journal of trauma & dissociation = Revue europeenne du trauma et de la dissociation*, *5*(2), 100209. https://doi.org/10.1016/j.ejtd.2021.100209

Korkeila, K., Kivelä, S. L., Suominen, S., Vahtera, J., Kivimäki, M., Sundell, J., Helenius, H., & Koskenvuo, M. (2004). Childhood adversities, parent-child relationships and dispositional optimism in adulthood. *Social psychiatry and psychiatric epidemiology*, *39*(4), 286–292. https://doi.org/10.1007/s00127-004-0740-x

Koverova, M. (2016). Psychometric properties of the Slovak version of the Professional quality of life scale: Preliminary results. *Global Journal of Psychology Research New Trends and Issues*, *6*(2). doi:10.18844/gjpr.v6i2.561

Kraai, I. H., Vermeulen, K. M., Hillege, H. L., Jaarsma, T., & Hoekstra, T. (2018). Optimism and quality of life in patients with heart failure. *Palliative & supportive care*, *16*(6), 725–731. https://doi.org/10.1017/S1478951517001055

Kube, T., Siebers, V. H. A., Herzog, P., Glombiewski, J. A., Doering, B. K., & Rief, W. (2018). Integrating situation-specific dysfunctional expectations and dispositional optimism into the cognitive model of depression - A path-analytic approach. *Journal of affective disorders*, *229*, 199–205. https://doi.org/10.1016/j.jad.2017.12.082

Kucmin, T., Kucmin, A., Turska, D., Turski, A., & Nogalski, A. (2018). Coping styles and dispositional optimism as predictors of post-traumatic stress disorder (PTSD) symptoms intensity in paramedics. Style radzenia sobie ze stresem i dyspozycyjny optymizm jako predyktory nasilenia objawów PTSD w grupie ratowników medycznych. *Psychiatria polska*, *52*(3), 557–571. https://doi.org/10.12740/PP/68514

Lai, J. C. L., & Yue, X. (2000). Measuring optimism in Hong Kong and mainland Chinese with the revised Life Orientation Test. *Personality and Individual Differences*, *28*(4), 781-796. https://doi.org/10.1016/S0191-8869(99)00138-5

Lai, J. C. L. (2009). Dispositional optimism buffers the impact of daily hassles on mental health in Chinese adolescents. Personality and Individual Differences, 47, 247-249. doi:10.1016/j.paid.2009.03.007

Lai, J. C. L., & Wong, W. S. (1998). Optimism and Coping with Unemployment among Hong Kong Chinese Women. *Journal of Research in Personality*, *32*(4), 454-479. https://doi.org/10.1006/jrpe.1998.2232

Lai, H., Wang, S., Zhao, Y., Qiu, C., & Gong, Q. (2020). Neurostructural correlates of optimism: Gray matter density in the putamen predicts dispositional optimism in late adolescence. *Human brain mapping*, *41*(6), 1459–1471. https://doi.org/10.1002/hbm.24888

Lancastle, D., & Boivin, J. (2005). Dispositional optimism, trait anxiety, and coping: unique or shared effects on biological response to fertility treatment?. *Health psychology : official journal of the Division of Health Psychology, American Psychological Association*, *24*(2), 171–178. https://doi.org/10.1037/0278-6133.24.2.171

Langbach, O., Bukholm, I., Benth, J. Š., & Røkke, O. (2016). Long-term quality of life and functionality after ventral hernia mesh repair. *Surgical endoscopy*, *30*(11), 5023–5033. https://doi.org/10.1007/s00464-016-4850-9

Lee, E., Jayasinghe, N., Swenson, C., & Dams-O'Connor, K. (2019). Dispositional optimism and cognitive functioning following traumatic brain injury. *Brain injury*, *33*(8), 985–990. https://doi.org/10.1080/02699052.2019.1606448

Leong Abdullah, M. F. I., Hami, R., Appalanaido, G. K., Azman, N., Mohd Shariff, N., & Md Sharif, S. S. (2019). Diagnosis of cancer is not a death sentence: Examining posttraumatic growth and its associated factors in cancer patients. Journal of Psychosocial Oncology, 37(5), 636–651. https://doi.org/10.1080/07347332.2019.1574946

Levy, S., Heruti, I., & Avitsur, R. (2019). Physical injury, stress, and health: Protective role of dispositional optimism. *Stress and health : journal of the International Society for the Investigation of Stress*, *35*(3), 267–276. https://doi.org/10.1002/smi.2859

Li, W. D., Li, S., Fay, D., & Frese, M. (2019). Reciprocal relationships between dispositional optimism and work experiences: A five-wave longitudinal investigation. *The Journal of applied psychology*, *104*(12), 1471–1486. https://doi.org/10.1037/apl0000417

Li, H., & Cao, Y. (2020). Best wishes for the future: The link between dispositional optimism and mental sagittal space-time mappings. *Personality and Individual Differences, 166,* Article 110212. https://doi.org/10.1016/j.paid.2020.110212

Ling, Y., Huebner, E. S., Liu, J., Liu, W.-L., Zhang, J., & Xiao, J. (2015). The origins of hope in adolescence: A test of a social–cognitive model. *Personality and Individual Differences*, *87*, 307–311. doi:10.1016/j.paid.2015.08.016

Ling, Y., Huebner, E. S., Fu, P., Zeng, Y., & He, Y. (2016). A person-oriented analysis of hope in Chinese adolescents. *Personality and Individual Differences*, *101*, 446–450. doi:10.1016/j.paid.2016.06.048

Llewellyn, C., McGurk, M., & Weinman, J. (2007). The relationship between the Patient Generated Index (PGI) and measures of HR-QoL following diagnosis with head and neck cancer: are illness and treatment perceptions determinants of judgment-based outcomes?. *British journal of health psychology*, *12*(Pt 3), 421–437. https://doi.org/10.1348/135910706x118422

Loh, J., Harms, C., & Harman, B. (2017). Effects of Parental Stress, Optimism, and Health-Promoting Behaviors on the Quality of Life of Primiparous and Multiparous Mothers. *Nursing research*, *66*(3), 231–239. https://doi.org/10.1097/NNR.0000000000000219

Lopez-Olivo, M. A., Landon, G. C., Siff, S. J., Edelstein, D., Pak, C., Kallen, M. A., Stanley, M., Zhang, H., Robinson, K. C., & Suarez-Almazor, M. E. (2011). Psychosocial determinants of outcomes in knee replacement. *Annals of the rheumatic diseases*, *70*(10), 1775–1781. https://doi.org/10.1136/ard.2010.146423

Lyrakos, G.N., Damigos, D., Mavreas, V. *et al.* A Translation and Validation Study of the Life Orientation Test Revised in the Greek Speaking Population of Nurses among Three Hospitals in Athens and Ioannina. *Soc Indic Res* **95**, 129–142 (2010). https://doi.org/10.1007/s11205-009-9453-6

Makikangas, A., Kinnunen, U., & Feldt, T. (2004). Self-Esteem, Dispositional Optimism, and Health: Evidence from Cross-Lagged Data on Employees. Journal of Research in Personality, 38, 556-575. https://doi.org/10.1016/j.jrp.2004.02.001

Martha, C., Sanchez, X., & Gomà-i-Freixanet, M. (2009). Risk perception as a function of risk exposure amongst rock climbers. *Psychology of Sport and Exercise*, *10*(1), 193–200. doi:10.1016/j.psychsport.2008.07.004

Mattis, J. S., Fontenot, D. L., Hatcher-Kay, C. A., Grayman, N. A., & Beale, R. L. (2004). Religiosity, Optimism, and Pessimism Among African Americans. *Journal of Black Psychology*, *30*(2), 187-207. https://doi.org/10.1177/0095798403260730 (Original work published 2004)

Mavioğlu, R.N., Boomsma, D.I. & Bartels, M. Causes of individual differences in adolescent optimism: a study in Dutch twins and their siblings. *Eur Child Adolesc Psychiatry* **24**, 1381–1388 (2015). https://doi.org/10.1007/s00787-015-0680-x

Mazanec, S. R., Daly, B. J., Douglas, S. L., & Lipson, A. R. (2010). The relationship between optimism and quality of life in newly diagnosed cancer patients. *Cancer nursing*, *33*(3), 235–243. https://doi.org/10.1097/NCC.0b013e3181c7fa80

Mest, J., Vaughan, B., Mulcahy, J., & Malliaras, P. (2020). The prevalence of self reported psychological characteristics of adults with lower limb tendinopathy. *Muscles, Ligaments and Tendons Journal*, *10*(04), 659. doi:10.32098/mltj.04.2020.14

McLean, L. A., Harvey, D. H. P., Pallant, J. F., Bartlett, J. R., & Mutimer, K. L. A. (2004). Adjustment of Mothers of Children With Obstetrical Brachial Plexus Injuries: Testing a Risk and Resistance Model. *Rehabilitation Psychology, 49*(3), 233–240. https://doi.org/10.1037/0090-5550.49.3.233

Mehrabian, A., & Ljunggren, E. (1997). Dimensionality and content of optimism–pessimism analyzed in terms of the PAD temperament model. *Personality and Individual Differences, 23*(5), 729–737. https://doi.org/10.1016/S0191-8869(97)00119-0

Michelle N. Krypel; Donna Henderson-King. (2010). Stress, coping styles, and optimism: are they related to meaning of education in students' lives?. , 13(3), 409–424. doi:10.1007/s11218-010-9132-0

Miller, B. K., Nicols, K. M., Clark, S., Daniels, A., & Grant, W. (2018). Meta-analysis of coefficient alpha for scores on the Narcissistic Personality Inventory. PLoS ONE, 13(12), 1–16. https://doi.org/10.1371/journal.pone.0208331

Mishra, K. K. (2012). Optimism as Predictor of Good Life. *International Research Associates of Happiness Studies*.

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. PLoS Medicine, 6(7), e1000097. https://doi.org/10.1371/journal.pmed.1000097

Mokkink, L. B., Terwee, C. B., Patrick, D. L., Alonso, J., Stratford, P. W., Knol, D. L., Bouter, L. M., & de Vet, H. C. W. (2010). The COSMIN study reached international consensus on taxonomy, terminology, and definitions of measurement properties for health-related patient-reported outcomes. Journal of Clinical Epidemiology, 63(7), 737–745. https://doi.org/10.1016/j.jclinepi.2010.02.006

Morán-Sánchez, I., Adoamnei, E., Sánchez-Ferrer, M. L., Prieto-Sánchez, M. T., Arense-Gonzalo, J. J., Casanova-Mompeán, V., Carmona-Barnosi, A., Mendiola, J., & Torres-Cantero, A. M. (2021). Is dispositional optimism associated with endometriomas and deep infiltrating endometriosis?. *Journal of psychosomatic obstetrics and gynaecology*, *42*(1), 50–56. https://doi.org/10.1080/0167482X.2020.1729732

Mullen, B., Muellerleile, P., & Bryant, B. (2001). Cumulative Meta-Analysis: A Consideration of Indicators of Sufficiency and Stability. Personality and Social Psychology Bulletin, 27(11), 1450–1462. https://doi.org/10.1177/01461672012711006

Nakano, K. (2004). Psychometric Properties of the Life Orientation Test-Revised in Samples of Japanese Students. *Psychological Reports*, *94*(3), 849-855. https://doi.org/10.2466/pr0.94.3.849-855 (Original work published 2004)

Nunnally, J., & Bernstein, I. (1968). Psychometric Theory. American Educational Research Journal, 5(3), 431. https://doi.org/10.2307/1161962

Orosová, O., Benka, J., Sebena, R., & Gajdošová, B. (2014). Gender, optimism,perceived stress on problematic internet use among Slovak university students.In C. Pracana (Ed.), Psychology Applications & Developments (306–315).inScience Press. *(PDF) Gender Differences in Internet Addiction among University Students in the Slovak Republic*. Available from: https://www.researchgate.net/publication/350581437_Gender_Differences_in_Internet_Addiction_among_University_Students_in_the_Slovak_Republic [accessed Nov 21 2025].

Pan, T. M., Mills, S. D., Fox, R. S., Baik, S. H., Harry, K. M., Roesch, S. C., Sadler, G. R., & Malcarne, V. L. (2017). The Psychometric Properties of English and Spanish Versions of the Life Orientation Test-Revised in Hispanic Americans. *Journal of psychopathology and behavioral assessment*, *39*(4), 657–668. https://doi.org/10.1007/s10862-017-9606-x

Paolillo, A., Platania, S., Magnano, P., & Ramaci, T. (2015). Organizational justice, optimism and commitment to change. *Procedia, Social and Behavioral Sciences*, *191*, 1697–1701. doi:10.1016/j.sbspro.2015.04.479

Peleg, G., Barak, O., Harel, Y., Rochberg, J., & Hoofien, D. (2009). Hope, dispositional optimism and severity of depression following traumatic brain injury. *Brain injury*, *23*(10), 800–808. https://doi.org/10.1080/02699050903196696

Pelley, T. J., Kirschman, K. J. B., Odar, C. C., Butz, C. L., Rye, M., Fabia, R. B., & Besner, G. E. (2013). The development and preliminary validation of the psychosocial adjustment to burn questionnaire. *Clinical Practice in Pediatric Psychology*, *1*(2), 171-183. https://doi.org/10.1037/cpp0000019

Pérez-Ramírez, F., García-García, I., Caparrós-González, R. A., & Peralta-Ramírez, M. I. (2017). Psychological assessment among immigrant and Spanish women during the postpartum period in Spain. *Journal of Reproductive and Infant Psychology*, 35(2), 159-171. https://doi.org/10.1080/02646838.2016.1246709

Poots, A., & Cassidy, T. (2020). Academic expectation, self-compassion, psychological capital, social support and student wellbeing. *International Journal of Educational Research*, *99*, 1-9. Article 101506. https://doi.org/10.1016/j.ijer.2019.101506

Quevedo, R.J., & Abella, M.C. (2011). Well-being and personality: Facet-level analyses. *Personality and Individual Differences, 50*, 206-211.

Rand, K. L. (2009). Hope and optimism: latent structures and influences on grade expectancy and academic performance. *Journal of Personality*, *77*(1), 231–260. doi:10.1111/j.1467-6494.2008.00544.x

Rauch, W. A., Schweizer, K., & Moosbrugger, H. (2007). Method effects due to social desirability as a parsimonious explanation of the deviation from unidimensionality in LOT-R scores. *Personality and Individual Differences*, *42*(8), 1597–1607. doi:10.1016/j.paid.2006.10.035

Reis, P. J., & Alligood, M. R. (2014). Prenatal yoga in late pregnancy and optimism, power, and well-being. *Nursing science quarterly*, *27*(1), 30–36. https://doi.org/10.1177/0894318413509706

Rius-Ottenheim, N., Kromhout, D., de Craen, A. J., Geleijnse, J. M., van der Mast, R. C., Zitman, F. G., Westendorp, R. G., Slagboom, P. E., & Giltay, E. J. (2012). Parental longevity correlates with offspring's optimism in two cohorts of community-dwelling older subjects. *Age (Dordrecht, Netherlands)*, *34*(2), 461–468. https://doi.org/10.1007/s11357-011-9236-2

Rodriguez, M. C., & Maeda, Y. (2006a). Meta-analysis of coefficient alpha. Psychological Methods, 11(3), 306–322. https://doi.org/10.1037/1082-989X.11.3.306

Rodriguez, M. C., & Maeda, Y. (2006b). Meta-Analysis of Coefficient Alpha. Psychological Methods, 11(3), 306–322. https://doi.org/10.1037/1082-989X.11.3.306

Rodrigue, J. R., Cornell, D. L., Jackson, S. I., Kanasky, W., Marhefka, S., & Reed, A. I. (2004). Are organ donation attitudes and beliefs, empathy, and life orientation related to donor registration status?. *Progress in transplantation (Aliso Viejo, Calif.)*, *14*(1), 56–60. https://doi.org/10.1177/152692480401400109

Rogers, M., & Glendon, A. I. (2003). Blood type and personality. *Personality and Individual Differences, 34*(7), 1099–1112. https://doi.org/10.1016/S0191-8869(02)00101-0

Romano, J. L., & Kromrey, J. D. (2009). What Are the Consequences Observations Is Violated. Educational and Psychological Measurement, 69(3), 404–428.

Ronaldson, A., Poole, L., Kidd, T., Leigh, E., Jahangiri, M., & Steptoe, A. (2014). Optimism measured pre-operatively is associated with reduced pain intensity and physical symptom reporting after coronary artery bypass graft surgery. *Journal of psychosomatic research*, *77*(4), 278–282. https://doi.org/10.1016/j.jpsychores.2014.07.018

Rothmann S, Essenko N. Job Characteristics, Optimism, Burnout, and ILL Health of Support Staff in a Higher Education Institution in South Africa. *South African Journal of Psychology*. 2007;37(1):135-152. doi:10.1177/008124630703700110

Rothmann, S. et al. 2008. Model of work-related ill health of academic staff in a South African higher education institution. South African journal of higher education, 22(2):404-422, [https://journals.co.za/content/high/22/2/EJC37437]

Rottinghaus, P. J., Day, S. X., & Borgen, F. H. (2005). The Career Futures Inventory: A Measure of Career-Related Adaptability and Optimism. *Journal of Career Assessment*, *13*(1), 3-24. https://doi.org/10.1177/1069072704270271 (Original work published 2005)

Roy, B., Diez-Roux, A. V., Seeman, T., Ranjit, N., Shea, S., & Cushman, M. (2010). Association of optimism and pessimism with inflammation and hemostasis in the Multi-Ethnic Study of Atherosclerosis (MESA). *Psychosomatic medicine*, *72*(2), 134–140. https://doi.org/10.1097/PSY.0b013e3181cb981b

Salsman, J. M., Brown, T. L., Brechting, E. H., & Carlson, C. R. (2005). The link between religion and spirituality and psychological adjustment: the mediating role of optimism and social support. *Personality & social psychology bulletin*, *31*(4), 522–535. https://doi.org/10.1177/0146167204271563

Sánchez-Meca, J., & Marín-Martínez, F. (2008). Confidence Intervals for the Overall Effect Size in Random-Effects Meta-Analysis. Psychological Methods, 13(1), 31–48. https://doi.org/10.1037/1082-989X.13.1.31

Sagone, E., & Elvira De Caroli, M. (2016). Are value priorities related to dispositional optimism and resilience? A correlational study. *Contemporary Educational Researches Journal*, *6*(1), 11. doi:10.18844/cerj.v6i1.481

Scheier, M. F., & Carver, C. S. (1985). Optimism, coping, and health: assessment and implications of generalised outcome expectancies. Health Psychology : Official Journal of the Division of Health Psychology, American Psychological Association, 4(3), 219–247. https://doi.org/10.1037/0278-6133.4.3.219

Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): a reevaluation of the Life Orientation Test. *Journal of personality and social psychology*, *67*(6), 1063–1078. https://doi.org/10.1037//0022-3514.67.6.1063

Schou-Bredal, I., Heir, T., Skogstad, L., Bonsaksen, T., Lerdal, A., Grimholt, T., & Ekeberg, Ø. (2017). Population-based norms of the Life Orientation Test---Revised (LOT-R). International Journal of Clinical and Health Psychology, 17(3), 216–224. https://doi.org/10.1016/j.ijchp.2017.07.005

Shifren, K., & Anzaldi, K. (2018). *Optimism, well-being, depressive symptoms, and perceived physical health: A study among stroke survivors.* Psychology, Health & Medicine, 23(1), 46-57. https://doi.org/10.1080/13548506.2017.1325505

Segerstrom, S. C., Evans, D. R., & Eisenlohr-Moul, T. A. (2011). Optimism and pessimism dimensions in the Life Orientation Test-Revised: Method and meaning. *Journal of Research in Personality*, *45*(1), 126–129. doi:10.1016/j.jrp.2010.11.007

Serlachius, A., Pulkki-Råback, L., Elovainio, M., Hintsanen, M., Mikkilä, V., Laitinen, T. T., Jokela, M., Rosenström, T., Josefsson, K., Juonala, M., Lehtimäki, T., Raitakari, O., & Keltikangas-Järvinen, L. (2015). Is dispositional optimism or dispositional pessimism predictive of ideal cardiovascular health? The Young Finns Study. Psychology and Health, 30(10), 1221–1239. https://doi.org/10.1080/08870446.2015.1041394

Shaheen, N., Andleeb, S., Ahmad, S., & Bano, A. (2014). Effect of optimism on psychological stress in breast cancer women. *FWU Journal of Social Sciences*, *8*(1), 84–90. https://sbbwu.edu.pk/journal/FWU_Journal_Summer2014,Vol.8,No.1/13_Effect_of_Optimism_on_Psychological.pdf

Sharpe, J. P., Martin, N. R., & Roth, K. A. (2011). Optimism and the Big Five factors of personality: Beyond Neuroticism and Extraversion. *Personality and Individual Differences*, *51*(8), 946–951. doi:10.1016/j.paid.2011.07.033

Shi, L., & Lin, L. (2019). The trim-and-fill method for publication bias: practical guidelines and recommendations based on a large database of meta-analyses. Medicine, 98(23), e15987. https://doi.org/10.1097/MD.0000000000015987

Smith, B. W., Tooley, E. M., Christopher, P. J., & Kay, V. S. (2010). Resilience as the ability to bounce back from stress: A neglected personal resource? *The Journal of Positive Psychology*, *5*(3), 166–176. https://doi.org/10.1080/17439760.2010.482186

Sood, N., Sood, M., Bansal, S., & Singh, D. C. (2020). Psychosocial profile of women reporting with breast related symptoms and their association with time taken for presentation, a hospital based study. *International Journal of Community Medicine and Public Health*, *7*(11), 4356. doi:10.18203/2394-6040.ijcmph20204730

Steptoe, A., Wright, C., Kunz-Ebrecht, S. R., & Iliffe, S. (2006). Dispositional optimism and health behaviour in community-dwelling older people: associations with healthy ageing. *British journal of health psychology*, *11*(Pt 1), 71–84. https://doi.org/10.1348/135910705X42850

Sumer, M., Giannotta, F., Settanni, M., & Ciairano, S. (2012). Parental support as mediator between optimism and depression in early adolescents. *Journal of Social & Psychological Sciences*, *5*(2).

Suryadi, B., Hayat, B., & Putra, M. D. K. (2021). The Indonesian version of the Life Orientation Test-Revised (LOT-R): Psychometric properties based on the Rasch model. Cogent Psychology, 8(1). https://doi.org/10.1080/23311908.2020.1869375

Szramka-Pawlak, B., Dańczak-Pazdrowska, A., Rzepa, T., Szewczyk, A., Sadowska-Przytocka, A., & Żaba, R. (2013). Health-related quality of life, optimism, and coping strategies in persons suffering from localized scleroderma. *Psychology, health & medicine*, *18*(6), 654–663. https://doi.org/10.1080/13548506.2013.764461

Thompson, B., & Vacha-Haase, T. (2000). Psychometrics Is Datametrics: The Test Is Not Reliable. Educational and Psychological Measurement, 60(2), 174–195. https://doi.org/10.1177/00131640021970448

Tomarken, A., Holland, J., Schachter, S., Vanderwerker, L., Zuckerman, E., Nelson, C., Coups, E., Ramirez, P. M., & Prigerson, H. (2008). Factors of complicated grief pre-death in caregivers of cancer patients. *Psycho-oncology*, *17*(2), 105–111. https://doi.org/10.1002/pon.1188

Tomakowsky, J., Lumley, M. A., Markowitz, N., & Frank, C. (2001). Optimistic explanatory style and dispositional optimism in HIV-infected men. *Journal of psychosomatic research*, *51*(4), 577–587. https://doi.org/10.1016/s0022-3999(01)00249-5

Tripepi, G., Jager, K. J., Dekker, F. W., Wanner, C., & Zoccali, C. (2007). Measures of effect: Relative risks, odds ratios, risk difference, and "number needed to treat." Kidney International, 72(7), 789–791. https://doi.org/10.1038/sj.ki.5002432

Trivedi, R. B., Blumenthal, J. A., O'Connor, C., Adams, K., Hinderliter, A., Dupree, C., Johnson, K., & Sherwood, A. (2009). Coping styles in heart failure patients with depressive symptoms. *Journal of psychosomatic research*, *67*(4), 339–346. https://doi.org/10.1016/j.jpsychores.2009.05.014

Tsakogia, Z., Lyrakos, G.N., Damigos, D. *et al.* The Effect of Dispositional Optimism in HRQOL in Patients with Chronic Musculoskeletal Pain Conditions in Greece. *Applied Research Quality Life* **6**, 53–70 (2011). https://doi.org/10.1007/s11482-010-9113-7

Tucker, R. P., Wingate, L. R. R., O'Keefe, V. M., Mills, A. C., Rasmussen, K., Davidson, C. L., & Grant, D. M. M. (2013). Rumination and suicidal ideation: The moderating roles of hope and optimism. *Personality and Individual Differences*, *55*(5), 606-611. https://doi.org/10.1016/j.paid.2013.05.013

Tusaie, K., Puskar, K., & Sereika, S. M. (2007). A predictive and moderating model of psychosocial resilience in adolescents. *Journal of nursing scholarship : an official publication of Sigma Theta Tau International Honor Society of Nursing*, *39*(1), 54–60. https://doi.org/10.1111/j.1547-5069.2007.00143.x

Umucu, E., Brooks, J.M., Lee, B., Iwanaga, K., Wu, J., Chen, A., & Chan, F. (2018). Measuring dispositional optimism in student Veterans: An item response theory analysis. *Military Psychology, 30*, 590 - 597.

Uchino, B. N., Cribbet, M., de Grey, R. G., Cronan, S., Trettevik, R., & Smith, T. W. (2017). Dispositional optimism and sleep quality: a test of mediating pathways. *Journal of behavioral medicine*, *40*(2), 360–365. https://doi.org/10.1007/s10865-016-9792-0

Uddin, M., Kabir, S., & Tanzee, F. Z. (2020). *Resilience, Optimism and Suicidal Ideation among Dhaka University Students*. *1*, 158–164.

Vacha-Haase, T. (1998). Reliability generalization: Exploring variance in measurement error affecting score reliability across studies. Educational and Psychological Measurement, 58(1), 6–20. https://doi.org/10.1177/0013164498058001002

Vera-Villarroel, P., Valtierra, A., & Contreras, D. (2016). Affectivity as mediator of the relation between optimism and quality of life in men who have sex with men with HIV. *International journal of clinical and health psychology : IJCHP*, *16*(3), 256–265. https://doi.org/10.1016/j.ijchp.2016.07.001

Viechtbauer, W. (2020). metafor: Meta-analysis package for R. R package version 2.4-0. R Package Version 2.4-0, 1, 1–275. https://orcid.org/0000-0003-3463-4063

Vilhena, E., Pais-Ribeiro, J., Silva, I., Pedro, L., Meneses, R. F., Cardoso, H., da Silva, A. M., & Mendonça, D. (2014). Psychosocial factors as predictors of quality of life in chronic Portuguese patients. *Health and quality of life outcomes*, *12*, 3. https://doi.org/10.1186/1477-7525-12-3

Vitorino, L. M., Lucchetti, G., Leão, F. C., Vallada, H., & Peres, M. F. P. (2018). The association between spirituality and religiousness and mental health. *Scientific reports*, *8*(1), 17233. https://doi.org/10.1038/s41598-018-35380-w

Vizoso, C., Arias-Gundín, O., & Rodríguez, C. (2019). Exploring coping and optimism as predictors of academic burnout and performance among university students. *Educational Psychology*, *39*(6), 768–783. https://doi.org/10.1080/01443410.2018.1545996

Vollmann, M., Scharloo, M., Langguth, B., Kalkouskaya, N., & Salewski, C. (2013). Illness representations as mediators of the relationship between dispositional optimism and depression in patients with chronic tinnitus: A cross-sectional study. *Psychology & Health*, 29(1), 81-93. https://doi.org/10.1080/08870446.2013.828294

Warne, R. (2008). Reliability Generalization (RG) Analysis: The Test is Not Reliable. Reliability Generalization (RG) Analysis: The Test Is Not Reliable Russell Warne Texas A&M University Paper Presented at the Annual Meeting of the Southwest Educational Research Association, 1–22.

Wang, Q., Hay, M., Clarke, D., & Menahem, S. (2012). The prevalence and predictors of anxiety and depression in adolescents with heart disease. *The Journal of Pediatrics*, *161*(5), 943–946. doi:10.1016/j.jpeds.2012.04.010

Wang, Mei Chuan; Wong, Y. Joel; Nyutu, Pius N.; and Fu, Chu Chun, "Suicidality Protective Factors Among Black College Students: Which Cultural and Personal Resources Matter?" (2020). *College of Humanities and Social Sciences*. 246. https://digitalcommons.uncfsu.edu/college_humanities_social_sciences/246

Weber, D. M., & Dickter, C. L. (2015). Confronting the "F" Word: The Effects of Gender, Ambiguity, and Individual Difference Variables on Non-Targets' Confrontation of Heterosexist Comments. *Journal of Homosexuality*, *62*(10), 1289–1312. https://doi.org/10.1080/00918369.2015.1060050

Wu, C.-H., Tsai, Y.-M., & Chen, L. H. (2009). How Do Positive Views Maintain Life Satisfaction? *Social Indicators Research*, *91*(2), 269–281. http://www.jstor.org/stable/27734830

Yasmin, S., Firdous, S., Saqib, S., & Khatoon, T. (2020). Fear of Negative Evaluation, Loneliness and Life Orientation of Never Married Men and Women. *Journal of Health, Medicine and Nursing*.

Yang, J., Wei, D., Wang, K., & Qiu, J. (2013). Gray matter correlates of dispositional optimism: a voxel-based morphometry study. *Neuroscience letters*, *553*, 201–205. https://doi.org/10.1016/j.neulet.2013.08.032

Yeo, K.-J., & Yap, C.-K. (2018). Helping undergraduate students cope with stress: The role of psychosocial resources as resilience factors. *The Social Science Journal*, *60*(1), 120–142.

doi:10.1080/03623319.2020.1728501

Yu, Y., & Luo, J. (2018). Dispositional optimism and well-being in college students: Self-efficacy as a mediator. *Social Behavior and Personality*, *46*(5), 783–792. doi:10.2224/sbp.6746

Yue, Xiao. Dong., Hao, Xia., & Goldman Giovanna, L. (2010). Humor Styles, Dispositional Optimism, and Mental Health among Undergraduates in Hong Kong and China. *Journal of Psychology in Chinese Societies*, *11*(2), 173-188.

Zak-Place, J., & Stern, M. (2004). Health belief factors and dispositional optimism as predictors of STD and HIV preventive behavior. *Journal of American college health : J of ACH*, *52*(5), 229–236. https://doi.org/10.3200/JACH.52.5.229-236

Zenger, M., Finck, C., Zanon, C., Jimenez, W., Singer, S., & Hinz, A. (2013). Evaluation of the Latin American version of the Life Orientation Test-Revised. *International Journal of Clinical and Health Psychology: IJCHP*, *13*(3), 243–252. doi:10.1016/s1697-2600(13)70029-2

Zeng, W., & Gu, M. (2017). Relationship between mindfulness and positive affect of Chinese older adults: Optimism as mediator. *Social Behavior and Personality: An International Journal, 45*(1), 155–162. https://doi.org/10.2224/sbp.5606

Zhang, J., Miao, D., Sun, Y., Xiao, R., Ren, L., Xiao, W., & Peng, J. (2013). The Impacts of Attributional Styles and Dispositional Optimism on Subject Well-Being: A Structural Equation Modelling Analysis. Social Indicators Research, 119(2), 757–769. https://doi.org/10.1007/s11205-013-0520-7

Zhao, W., Huang, Z., Huang, Y., Huang, Q., Chen, S., Liu, X., … Li, T. (2021). Optimism is a nonnegligible factor associated with compliance to urate lowering therapy in patients with gout: A prospective study. doi:10.21203/rs.3.rs-144137/v1

Zoellner, T., Rabe, S., Karl, A., & Maercker, A. (2008). Posttraumatic growth in accident survivors: openness and optimism as predictors of its constructive or illusory sides. *Journal of clinical psychology*, *64*(3), 245–263. https://doi.org/10.1002/jclp.20441

Zou, R., Zhang, D., Niu, G., Xie, X., Fan, C., Tian, Y., & Zhou, Z. (2016). Cross-sectional age differences in dispositional optimism in Chinese children and adolescents. *Personality and Individual Differences, 102*, 133-138.

Zumbo, B. D. (1999). A handbook on the theory and methods of differential item functioning (DIF): Logistic regression as a unitary framework for binary and Likert-type (ordinal) item scores. *Ottawa, Ontario: Directorate of Human Resources Research and Evaluation, Department of National Defence*.

Appendix

Forrest Plot

Source: Personal data (2024)

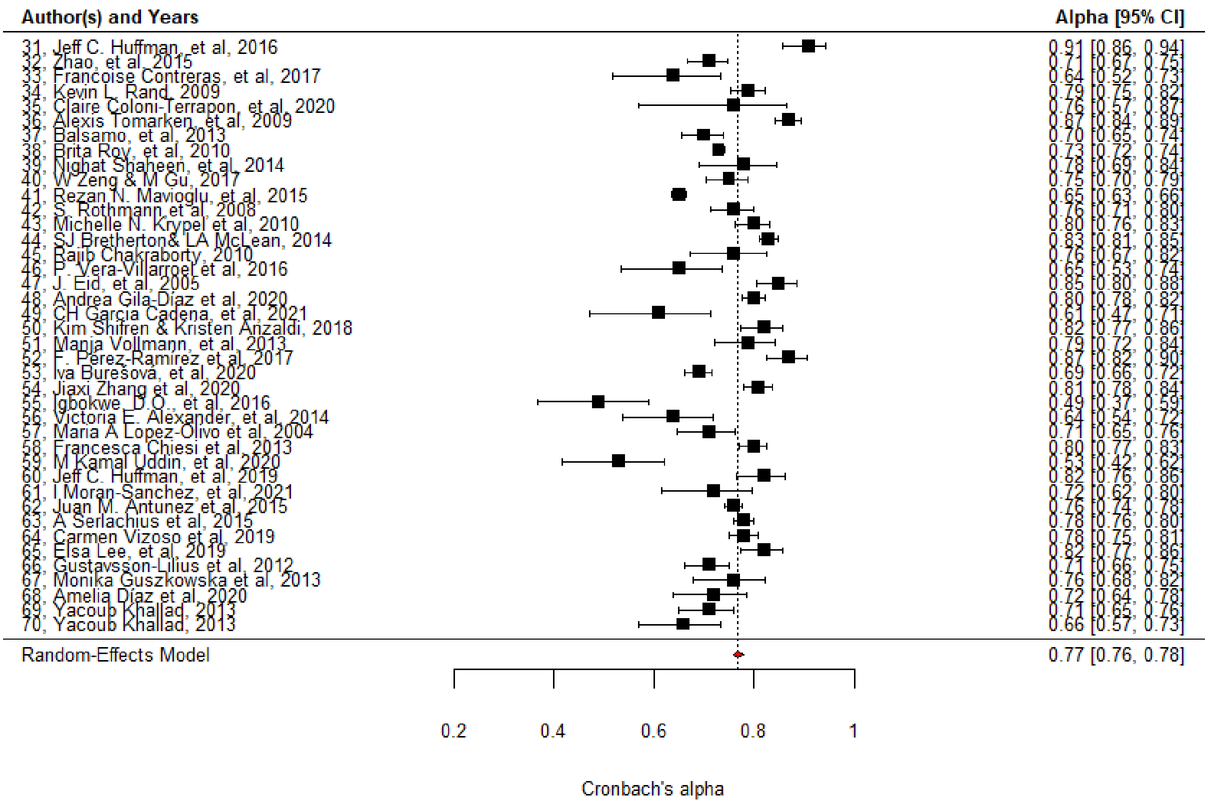


Figure 4. Forest Plot authors and years from numbers 31 to 70

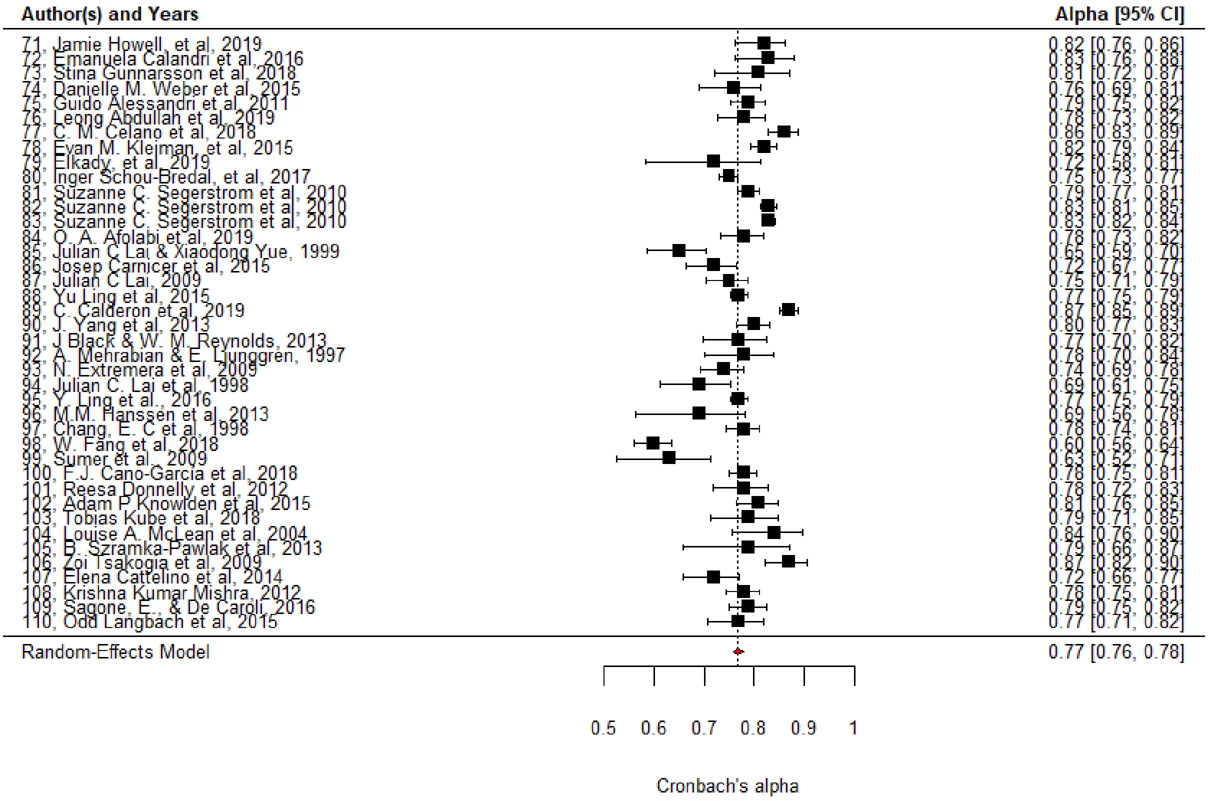


Figure 5. Forest Plot authors and years from numbers 71 to 110

http://journal.uinjkt.ac.id/index.php/jp3i

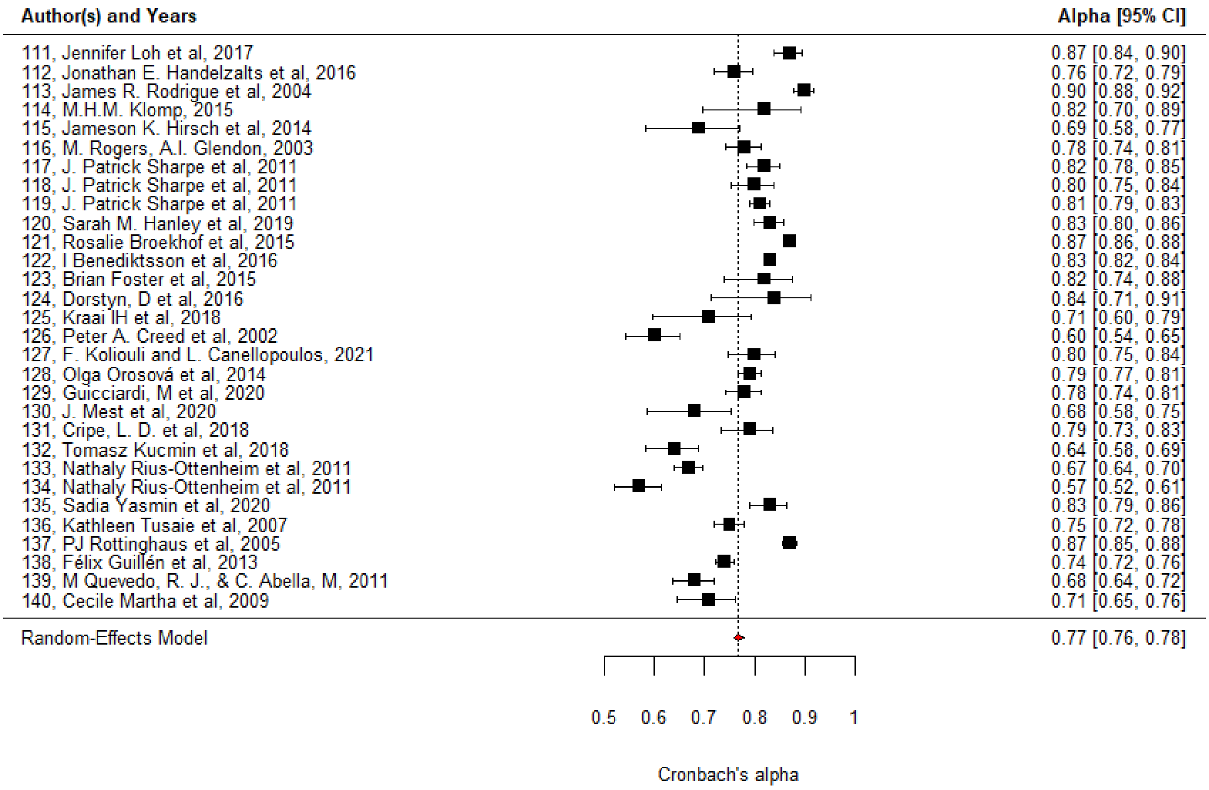


Figure 6. Forest Plot authors and years from numbers 111 to 140

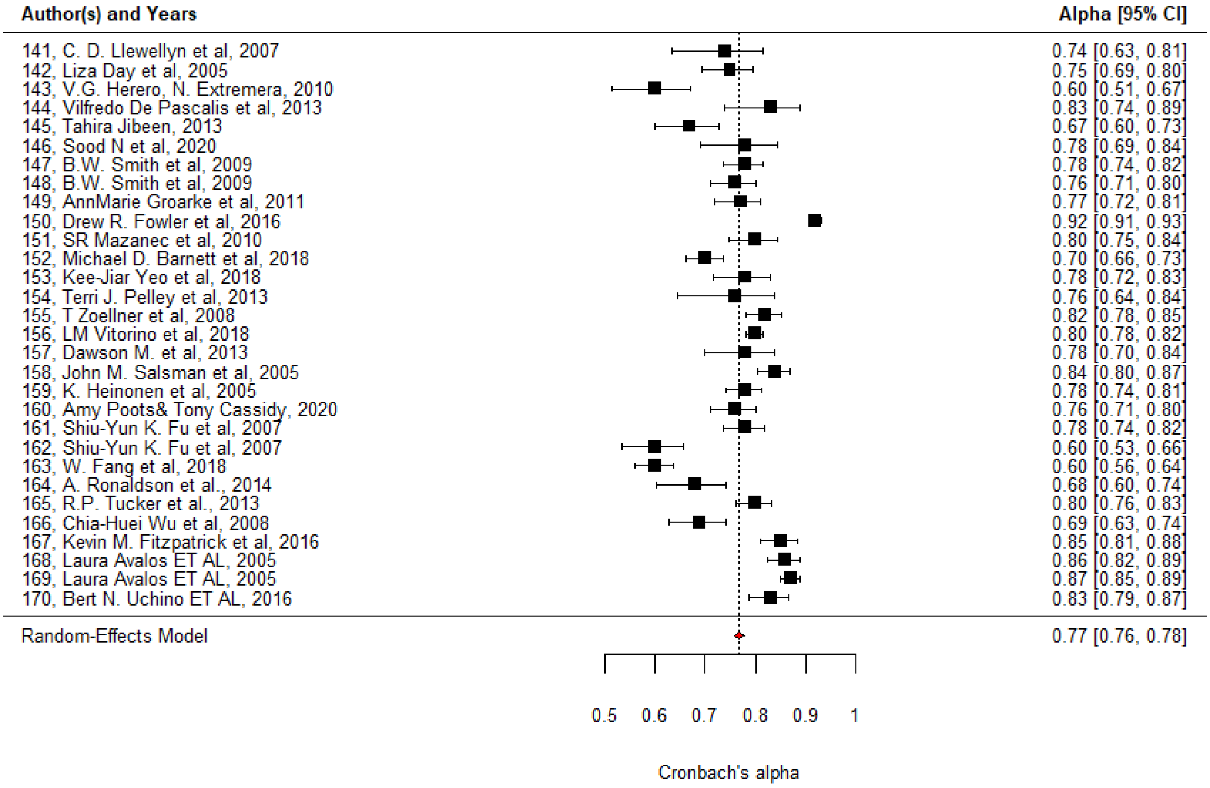


Figure 7. Forest Plot authors and years from numbers 141 to 170

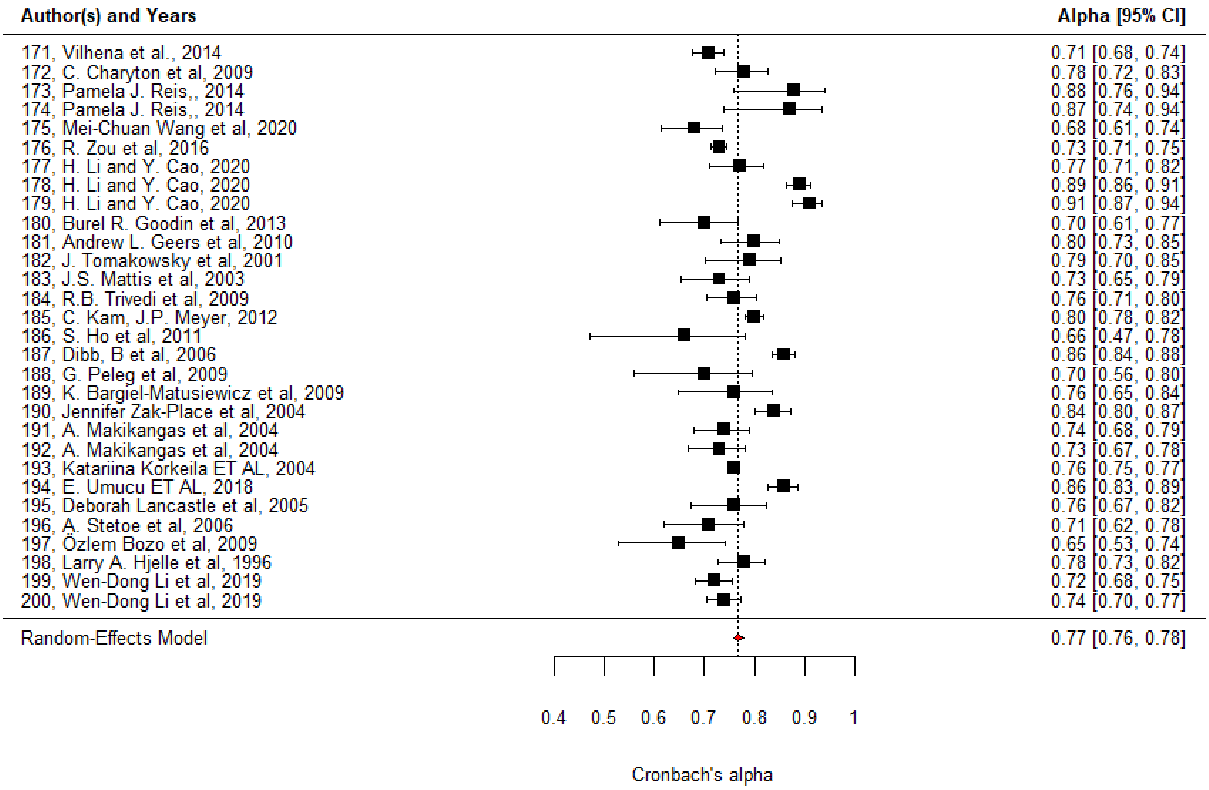


Figure 8. Forest Plot authors and years from numbers 171 to 200

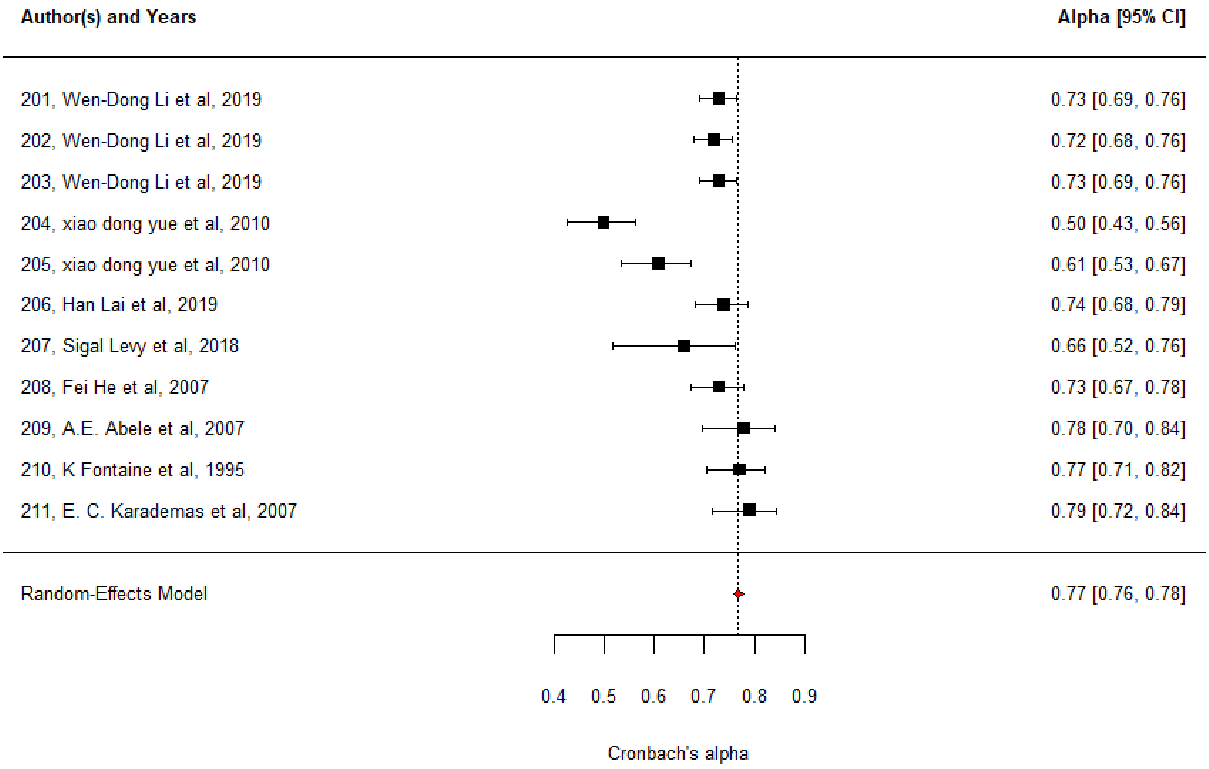


Figure 9. Forest Plot authors and years from numbers 201 to 211