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# Profiling parents' wellbeing with a newly developed positive parenting measure

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## KEYWORDS

Parenting,  
Positive Parenting,  
Latent Profile Analysis,  
wellbeing,  
NICOMACHUS-Positive Parenting,  
NPP,  
LPA

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## ABSTRACT

This study focused on replicating the tenability and reliability of the 4-factor structure of a new positive parenting measure, namely NICOMACHUS-Positive Parenting (NPP). Positive parenting scores were used along with wellbeing scores (emotional, psychological, happiness, life satisfaction, positive emotions, life meaning) to profile respondents using Latent Profile Analysis (LPA). The sample included 489 respondents with at least a child aged 7–13 years during 2021–22 (amidst COVID-19). The 4-factor NPP structure was tenable and reliable. The significantly different 4-factor bifactor model vs. the first-order 4-factor model suggested there may be a general parenting factor simultaneously with the 4 specific positive parenting factors. Bifactor fit measures suggested both total and per factor NPP scores can be reliably calculated. Regarding LPA, 3 positive parenting–wellbeing profiles emerged with adequate size. Profile 1 (containing about 50% of the respondents) had the highest positive parenting and wellbeing scores. Profile 2 (containing about 35% of the respondents) had the 2<sup>nd</sup> highest positive parenting and the lowest wellbeing scores. Profile 3 (containing about 15% of the respondents) had the lowest positive parenting and the 2<sup>nd</sup> highest wellbeing scores. This 3-profile solution was cross-validated with 8 different clustering methods. Mean score differences across the 3 profiles were significant with a large effect size for all the LPA inputs, suggesting that the derived profiles were significantly distinct from one another. There were significant associations between parental characteristics (age, role, education level, work status, annual income), child characteristics (gender, special needs, birth order), and profile membership.

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## Introduction

Positive Parenting was recently broadened with a new positive parenting measure: NICOMACHUS-Positive Parenting (NPP; Kyriazos & Stalikas, 2019a). Within this parenting model (Kyriazos & Stalikas, 2018; Kyriazos & Stalikas, 2019a; Seligman, 2002), parenthood is a realm where parents: 1) Nurture child's values; 2) Discover and boost the child's strengths; 3) Help children shape their life around their strengths, as a means of balancing weaknesses; 4) Increase children's and family's wellbeing. Regarding nurturing values, specific values of the "Values in Action" classification were selected for the Greek cultural context (Peterson & Seligman, 2004). Strengths were viewed as a base for talents, adopting the Strength Finder's view regarding strengths (Rath, 2007). A strength is the ability to have a constantly high performance in a specific activity (Asplund et al., 2007). NPP has twenty items in four dimensions: Nurturing Values, Strength Identification and Boosting, Parenting Context (Environment), Involvement, and they were designed and interrelated based on the following positive parenting model (Kyriazos & Stalikas, 2019a).

### ***The Positive Parenting Model behind NICOMACHUS-Positive Parenting***

Positive Parenting is focused on increasing a child's positive emotions, by expressing unconditional love and acceptance (Seligman, 2002). Positive emotions through their broadening effect (Fredrickson, 1998) will increase a child's tendency for exploration, and creativity. This function has secure attachment as a prerequisite (Ainsworth et al., 1978; Bowlby, 1969). Exploration and creativity will help certain skills, and abilities to gradually emerge.

This is essentially a process of acquiring mastery (Seligman, 2002), nurturing emergent child's strengths. To boost this nurturing effect, when a new strength appears, parents should name the strength, praise, and encourage the child. This is a parenting practice to identify and boost the strength through positive reinforcement (Seligman, 2002) and it is generally more effective when parents also role-model the boosted strength (Bandura, 1977; Huta, 2012), nurturing the value behind it. Positive parents express their positive reinforcement through positive emotions and involvement. Subsequently, the child will attempt to receive more positive reinforcement, using the strength repeatedly. Eventually, the child will keep expressing the strengths generating successful attempts, abandoning those generating unsuccessful ones. Some strengths will consistently have more successful attempts than others (Seligman, 2002).

Parents are urged to build their child's education, activities, and future career goals around his/her strengths appearing more often. In this way, the chances for the child to achieve long-lasting, eudemonic wellbeing are higher (Seligman, 2002). The preconditions for the success of the above process are the effective coverage of the basic parenting tasks, including (Bradley, 2002) sustenance (survival, safety, and basic biological needs satisfaction), cognitive and socioemotional stimulation, support, structure, and surveillance (Bradley, 2002; Bradley & Caldwell, 1995).

The NPP validation (Kyriazos & Stalikas, 2019a) was completed in three stages and confirmed the four NPP factors: Nurturing Values (NV, items 1-9), Strength Identification and Boosting (SIB, items 10-14), Parenting Context (PC, items 15-17) and Involvement (I, items 18-20). In stage 1 theoretically, relevant items were iteratively reduced and refined generating the 20-item measure. Next, the NPP psychometrics were validated in two large-scale studies (see Kyriazos & Stalikas, 2019a). A 4-factor structure emerged based on EFA and CFA. Full strict measurement invariance across the child's gender was successfully established (Kyriazos & Stalikas, 2019a).

Generally, there was a significant positive relationship between NPP and positive parenting practices like Supportive/Engaged Parenting (Lovejoy et al., 1999), Emotional Warmth (Reid et al., 2015), positive parenting themes (Berry & Jones, 1995), i.e., responsive parenting (Baumrind, 1971; Maccoby & Martin 1983) as well as with parenting satisfaction (James et al., 1985). Non-Positive Parenting Practices had a significant, negative association with NPP, i.e., inconsistent discipline, poor supervision (Elgar et al., 2007), anxious intrusiveness, punitive discipline, permissiveness (Reid et al., 2015), development problems, parenting capacity problems, Family/Environmental problems (Sheppard et al., 2010), hostile/coercive parenting (Lovejoy et al., 1999), and stressful parenting (Berry & Jones, 1995). The association of NPP with wellbeing constructs was also highly significant, i.e., with flourishing (PERMA; Butler & Kern, 2016), life satisfaction (Diener et al., 1985), emotional and psychological wellbeing (Keyes et al., 2008), and positive affect (Diener et al., 2010).

Beyond the NPP, does this mean that parents perceive parenthood as a "bounty of happiness"?

### ***Parenting and wellbeing***

Wellbeing encompasses several positive human functioning dimensions (Boniwell et al., 2013). Primarily, it includes subjective wellbeing (Diener et al., 1999), flourishing (Seligman, 2011), and happiness (Seligman, 2002). The hedonic wellbeing tradition (Ryan & Deci, 2001) means experiencing more positive emotions than negative, plus global life satisfaction (Ruini, 2017). Therefore, it involves both affective and cognitive life appraisals (Diener et al., 1999).

Research on parenting and wellbeing reported mixed findings on their relationship. Some studies showed that parents perceived lower wellbeing than non-parents, whereas others showed that parents had higher or similar wellbeing to non-parents (Nelson et al., 2014; Hart, 2021; Sirgy, 2021). Research following parents longitudinally reported that wellbeing increased while waiting for their firstborn, and it dropped to baseline shortly after (Hart, 2021; Sirgy, 2021). A meta-analysis confirmed that the transition to parenthood is associated with an initial increase in life satisfaction, declining later (Luhmann, et al., 2012). The same source reported that

parents perceived higher positive emotions after their childbirth than before parenthood (Sirgy, 2021). Other longitudinal studies reported that wellbeing and happiness decreased incrementally with the birth of each child (Hart, 2021).

Hansen et al., (2009) also examined the link between parental status (childless individuals, parents with residential children, and empty nest parents) and multiple wellbeing measures in midlife adults or older. These measures covered life satisfaction, self-esteem, affective wellbeing, depression, and loneliness. Results suggested that childless women perceived the lowest cognitive wellbeing, whereas parental status and psychological wellbeing were unrelated (Sirgy, 2021). Furthermore, different sources reported that working mothers perceived fewer positive emotions, rating childcare barely more enjoyable than commuting or housekeeping (Kahneman et al., 2004; Hart, 2021). Generally, research suggested a moderating effect of gender on the relation between parenting and wellbeing (Sirgy, 2021; Nelson-Coffey, 2018). Specifically, parenting is associated with higher wellbeing for fathers than for mothers (Sirgy, 2021). Parenting young children were reported to be harder for women than men. This difference is less pronounced for parents of adult children, particularly if the children are well adjusted or have left home (Ryff, 2018; Hart, 2021).

A different body of research suggested that socioeconomic status moderated the effect of parenthood on wellbeing (Margolis & Myrskylä, 2015; Nelson et al., 2013; Sirgy, 2021). Parents who are employed, have higher income, and have higher education, experience higher levels of wellbeing than parents with low socioeconomic status. Perhaps childcare is more burdensome when parents have available resources to manage it (Musick, et al., 2016; Nelson et al., 2013; Nelson-Coffey et al., 2017; Sirgy, 2021). A different line of research suggested that parental wellbeing was associated with child's temperament, while other sources argued that the parent's age, gender, socioeconomic status, and social support may affect parental wellbeing (Nelson et al., 2014; Hart, 2021; Sirgy 2021). Nelson et al. (2014; as cited in Hart, 2021) also reported that parents perceived higher life meaning compared to non-parents and having a child in the home was linked to life meaning.

### ***The present study***

Considering the above background, classifying positive parenting (measured with NPP) in tandem with wellbeing measures would provide preliminary criterion validity evidence for the NPP, adding up to the positive association reported between NPP and wellbeing in previous research (Kyriazos & Stalikas, 2019a). Furthermore, it could answer the question, what are the profiles of parents/caregivers scoring high in positive parenting, contributing to the existing inconclusive literature on parenting and wellbeing.

Therefore, the first objective of this study was to answer: (1) What was the factor structure of NPP? Especially pertinent for this objective was to answer: (1a) if the 4-factor NPP structure reported by Kyriazos and Stalikas, (2019a) tenable and reliable in this dataset; and (1b) if there was a higher-order parenting structure in NPP.

Note also that examining the tenability of the NPP structure was a prerequisite for all subsequent analyses given that: (a) Data was collected amidst COVID-19 i.e., a huge extraneous variable (see Kline, 2020); and (b) NPP was a newly developed instrument, and the construct validation process is multiphasic and not a single pass/fail test (Zumbo & Chan, p. 4; Kline, 2016, p. 93).

Additionally, NPP as a measure of positive parenting is inherently connected to wellbeing (Kyriazos & Stalikas, 2019a). So, it might contribute to the inconclusive literature regarding the association between parenting and wellbeing to group the parents using their positive parenting and wellbeing scores. Therefore, the NPP was used to profile parents through Latent Profile Analysis (LPA) using NPP scores in tandem with wellbeing constructs (emotional wellbeing, psychological wellbeing, happiness, life satisfaction, positive emotions, life meaning) seeking to answer: (2) How many and which profiles were there in the data? (3) What was the size of each profile? (4) Are there significant differences across profile membership and positive parenting-wellbeing constructs? (5) How did demographics differ across profiles? To answer, we used several wellbeing measures: affective (positive emotions), cognitive (subjective happiness, life satisfaction), psychological, and life meaning. These draw either on the hedonic wellbeing tradition (Ryan & Deci, 2001) connected to emotional wellbeing or the eudemonic tradition (e.g., Ryff, 1989; Keyes, 2002).

## Method

### *Participants and procedure*

Inclusion criteria were parenting at least a child 7–13 years. The sample involved 489 respondents ( $M_{age} = 44$  years,  $SD = 7.23$ ) of Greek nationality (96%). Most respondents (76%) were biological mothers, 20% biological fathers, 1% stepparents, 1% grandparents, and 2% endorsed “*other*”. They raised 1 (31%), 2 (48%), or  $\geq 3$  (21%) children per family (57% girls), aged 7–10 years (51%), and 11–13 (49%), without any special need (93%). The reference child was either their first (58%), second (29%), or third (10%) child in the family (2% endorsed “*other*”). Almost all respondents (96%) lived with the reference child. Most participants (67%) had a B.A. or higher, 23% finished high school, 3% junior high school or lower, and 7% endorsed “*other*”. Most respondents (87%) were employed, with an annual income 0–10,000€ (26%), followed by 10,001–20,000€ (34%), 20,001–30,000€ (20%), and  $> 30,000$  (21%). Respondents (96% biological parents) will be henceforward referred to as “parents” in the context of this work.

The sample was recruited online between 2021–2022 (amidst COVID-19) through word of mouth. Specifically, psychology students voluntarily recruited parents from their social environment. Recruiters received extra course credit. Recruited parents did not receive any incentive (see, Supplementary material: instructions to the respondents).

### *Measures*

#### **Nicomachus–Positive Parenting (NPP)<sup>1</sup>**

NPP (Kyriazos & Stalikas, 2019a) measures positive parenting practices for children 7–13 years (e.g., “*I can say I am sufficiently aware of my child’s strengths*”). NPP contains 20 items tapping 4 factors: Nurturing Values (NV), Strength Identification and Boosting (SIB), Parenting Context (PC), and Involvement (I). Items are rated on a 5-point Likert scale (1= *Absolutely Untrue*, 3= *Can’t Say True or Untrue*, 5= *Absolutely True*). There are no reverse-scored items. The score is ranging from 1 (minimum) to 5 (maximum). Kyriazos and Stalikas (2019a) reported that across 2 samples internal consistency reliability was .92–.93 (Total NPP), .92–.89 (NV), .81–.85 (SIB), .80–.85 (PC), .62–.75 (I).

#### **Mental Health Continuum–Short Form (MHC–SF)**

MHC–SF (Keyes et al., 2008) is a self-report, 14-item questionnaire, measuring three wellbeing dimensions proposed by Keyes (2002), namely emotional (EWB; e.g., “*How often did you feel happy?*”), social (SWB; e.g., “*How often did you feel that you belonged to a community?*”) and psychological (PWB; e.g., “*How often did you feel good at managing the responsibilities of your daily life?*”). Items are rated on a 6-point frequency scale (0 = Never, 5 = Every Day) referring to the past month. Keyes (2002) reported adequate ( $>.80$ ) internal consistency reliability. In the current study it was  $\alpha = .90$  (MHC–SF total), .82 (EWB), .81 (PWB), .86 (SWB).

#### **Subjective Happiness Scale (SHS)**

SHS (Lyubomirsky & Lepper, 1999) is a measure of happiness. Four items (e.g., In general, I consider myself ...) are rated on a 7-point scale with different anchors for each item (e.g., 1 = *not a very happy person* to 7 = *very happy person*). Lyubomirsky and Lepper (1999) reported internal consistency reliability .79–.94. In this study, internal consistency reliability was  $\alpha = .76$ .

#### **Satisfaction with Life Scale (SWLS)**

The SWLS (Diener et al., 1985) measures perceived global life satisfaction with 5 items (e.g., “*I am satisfied with my life*”) rated on a 7-point Likert scale, from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*). Pavot and Diener

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(1993) reported that internal consistency reliability .79–.89 and in a Greek sample it was  $\alpha = .87$  (Kyriazos et al., 2021a). In this study, it was  $\alpha = .86$ .

### Scale of Positive and Negative Experience 8 (SPANE-8)

SPANE-8 (Diener et al., 2010; Kyriazos et al., 2018) is a shortened SPANE-12, containing 1 general experience per factor instead of 3 (Diener et al., 2010, p.145). Items (e.g., “Pleasant”, “Bad”) are rated on a 5-point Likert scale (1= *Very Rarely or Never*, 5= *Very Often or Always*). Internal consistency reliability in a Greek sample (Kyriazos & Stalikas, 2021) was  $\alpha = .86$  (SPANE8-P) and  $.79$  (SPANE8-N). In this study, it was  $\alpha = .87$  (SPANE8-P) and  $.80$  (SPANE8-N).

### Meaning in Life Questionnaire (MLQ)

The MLQ (Steger et al., 2006) measures life meaning (e.g., “*I understand my life’s meaning*”, “*I am searching for meaning in my life*”) with 10 items in two factors (Presence of meaning, Search for meaning). Items are rated on a 7-point Likert scale (from 1 = *Absolutely True*, 7 = *Absolutely Untrue*). Internal consistency reliability in a Greek sample (Stalikas et al., 2018) was  $\alpha = .76$  (MLQ total),  $.85$  (MLQ-P),  $.86$  (MLQ-S). In this study it was  $\alpha = .78$  (MLQ total),  $.84$  (MLQ-P),  $.86$  (MLQ-S).

### Sample power analysis

A priori power analysis based on RMSEA (MacCallum et al., 1996) for the first-order 4-factor NPP model (Kyriazos & Stalikas, 2019a) suggested that  $N = 96$  was necessary to achieve 80% power to reject a wrong model ( $df = 164$ , Null RMSEA =  $.05$ , Alternative RMSEA =  $.08$ ,  $\alpha = .05$ ). For the LPA a sample of  $N = 489$  approximates the 500 cases proposed for LPA (Spurk et al., 2020).

### Analytic strategy

See an overview of the study analyses in Table SM.1 (Supplementary material). The R software was used for data analyses (R Development Core Team, 2022). Initially, the NPP factor structure was validated by examining: first-order, second-order, and a Bifactor CFA models (see the Results). CFA Goodness fit criteria were RMSEA  $\leq 0.06$ , RMSEA 90% CI  $\leq 0.06$ , CFI  $\geq 0.95$ , TLI  $\geq 0.95$ , and SRMR  $\leq 0.08$  (Hu & Bentler, 1999) and lowest Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC), (Mair, 2018).

To select the best fitting CFA model the fit differences were compared, including both the Chi-square difference test and AIC, BIC. These information criteria can be used both in nested and non-nested model comparisons. This course of action was adopted because experts are disagreement on whether a model with correlated factors is nested within a Bifactor model for more than 3 latent factors, “with lower AIC and BIC values indicating a better fitting model” (McDermott et al., 2017, p. 15; Kline, 2016).

Regarding the Bifactor model tested, recommendations in Bifactor literature (Reise, 2012; Rodriguez et al., 2016) proposed that researchers can calculate ancillary Bifactor measures to determine the most appropriate interpretation of an instrument’s dimensionality i.e., unidimensionality vs. multidimensionality (McDermott et al., 2017). This was the reason for testing a Bifactor model. These measures provide more nuanced information on an instrument’s dimensionality (McDermott, et al., 2017; Reise et al., 2013; Stucky & Edelen, 2014). Bifactor ancillary measures were Explained Common Variance (ECV), Percent of Uncontaminated Correlations (PUC; c.f., Rodriguez et al., 2016), and Omega Hierarchical ( $\omega_H$ ; Reise, 2012), a model-based reliability coefficient.

Subsequently, Latent Profile Analysis (LPA) followed using the NPP scores and different wellbeing scores. LPA is a model-based classification method, which classifies individuals into distinct groups (i.e., classes, clusters, or profiles) based on their scores on a set of continuous observed variables by using statistical tests and model fit indicators (see Masyn, 2013). LPA profiles respondents into categories (subpopulations) that have different configural profiles of attributes sets using varying degrees of probabilities (Spurk et al., 2020). Rather than assuming that continuous latent factors explain the observed associations –like the common factor model– the LPA model suggests that the associations can be attributed to the differences in the means of the continuous measures over the latent groups (see Bauer & Curran, 2004).

To compare the latent profile models the following model fit indicators were used. AIC is based on  $-2$  log-likelihood, and penalized by the number of parameters. Approximate Weight of Evidence (AWE) combines information on model fit and on classification errors (Bensmail et al., 1997). BIC is based on  $-2$  log-likelihood,

and penalized by the number of parameters adjusted by sample size. Classification Likelihood Criterion (CLC) is based on  $-2 \log$ -likelihood, and it is penalized by the entropy (Biernacki & Govaert, 1997). Kullback information criterion (KIC) is based on  $-2 \log$ -likelihood, and it is penalized by 3 times the number of parameters  $-1$  (Cavanaugh & Noe, 1999). Generally, the model with the lowest indicator is preferred (Mair, 2018), although there are alternative maximizing approaches (i.e., higher loglikelihood values lead to a higher BIC; Fraley & Raftery, 2002; Mair, 2018), depending on the software or R package used.

Furthermore, for cross-checking the optimal profile model to be retained we implemented the calculation proposed by Akogul and Erisoglu (2017), which integrates several fit indicators for choosing the optimal profile model using the Analytic Hierarchy Process (AHP; Saaty, 1990). The AHP was based on the fit of AIC, AWE, BIC, CLC, and KIC. Finally, to ensure that the optimum number of profiles was retained, eight additional clustering methods were implemented (Ward, Single, Complete, Average, McQuitty, Median, Centroid, Kmeans) to identify the relevant number of profiles in the dataset (Charrad et al., 2014). There are several cluster-validation approaches (Hennig, 2016, p.724; Koutroumbas & Theodoridis, 2008, p. 864). The approach used here was based on internal and relative criteria. The relative criteria were the evaluation of the clustering structure by comparing several different clustering schemes on the same dataset, e.g., regarding the number of clusters (Charrad et al., 2014; Hennig, 2016; Koutroumbas & Theodoridis, 2008).

## Results

### *Validating the NPP model*

The univariate normality was examined with Kolmogorov-Smirnov, Shapiro-Wilk, Shapiro-Francia, and Anderson-Darling tests,  $p < .001$ . The multivariate normality was examined with Mardia's multivariate kurtosis and skewness, Henze-Zirkler's consistent test, Doornik-Hansen test, and Energy-test,  $p < .001$ . There were no missing values because the online survey fields were obligatory (Stalikas & Kyriazos, 2019). There were 20 multivariate outliers, Mahalanobis' distance critical value  $> \chi^2(20) = 45.31$ ,  $p < .001$ . Outliers were not data input errors, and exclusion was unsupported, final  $N = 489$ .

### **Testing alternative models with Confirmatory Factor Analysis (CFA)**

To validate if the NPP structure (Kyriazos & Stalikas, 2019a) was tenable, 4 alternative CFA models were specified (MLR estimator).

MODEL A was a First-order 3-factor model with NV and SIB factors in a single factor, to verify their distinctiveness. MODEL B was the First-order 4-factor model proposed by Kyriazos and Stalikas (2019a), without error covariances. MODEL C was the second-order alternative of MODEL B, with a second-order parenting factor and the 4 first-order factors of MODEL B. MODEL D was a Bifactor alternative of MODEL B. All 20 NPP items tapped a general parenting factor and simultaneously the 4 factors of MODEL B as specific factors of positive parenting. This is a model configuration borrowed from the structure of intelligence. See the fit of all the models tested, the range of factor loadings, and inter-factor correlations in Table 1.

The 4-factor model (MODEL B) and the second-order alternative (MODEL C) had a comparably good fit and the 4-factor Bifactor model (MODEL D) showed an even better fit (Table 1). Regarding the model fit comparisons (Table 2), the 4-factor Bifactor model (MODEL D) had the lowest information criteria compared to the rest of the models. The  $\chi^2$  difference test showed that: (A) the difference between the 4-factor Bifactor model (MODEL D) from the first-order 4-factor model (MODEL B) was significant,  $p < .001$ . (B) The  $\chi^2$  difference between the first-order 4-factor model (MODEL B) from the second-order 4-factor model (MODEL C) was not significant,  $p = .235$ . (C) the  $\chi^2$  difference between the second-order 4-factor model (MODEL C) from the first-order 3-factor model (MODEL A) was significant,  $p < .001$ .

The calculation of ancillary bifactor model fit indicators showed that the 4-factor Bifactor model had a PUC  $< .80$  ( $=.73$ ),  $ECV_{Gen} > .60$  ( $=.76$ ) and  $\omega_h > .70$  ( $=.93$ ), i.e., within the gray zone (Stucky et al., 2014), suggesting the presence of some multidimensionality and some unidimensionality (Stucky et al., 2014; Reise et al., 2013), so both total and per factor NPP scores can be used.

After jointly considering, model fit, factor loadings, inter-factor correlations (Table 1), and the  $\chi^2$  difference tests (Table 2) the first-order 4-factor model fit was considered robust,  $\chi^2(164) = 464.55$ , RMSEA = .061 [90% CI .055, .067], CFI = .951, TLI = .944, SRMR = .057 (no error covariances). All standardized factor loadings were > .40 (Brown, 2015), from .671 - .940,  $p < .001$  (Table 1).

**Table 1**

*Goodness of Fit, Factor Loadings, and Factor Inter-correlations for the Alternative NPP Models Tested (N = 489)*

| Model fit Indicator      | CFA Models Tested for NPP              |                                       |                                       |   |
|--------------------------|--|---------------------------------------|---------------------------------------|---|
|                          | MODEL A <sup>a</sup><br>F.O. 3- factor | MODEL B <sup>b</sup><br>F.O. 4-factor | MODEL C <sup>c</sup><br>S.O. 4-factor | MODEL D <sup>d</sup><br>4-factor Bifactor |
| $\chi^2$                 | 597.87                                 | 464.55                                | 468.74                                | 270.34                                    |
| Df                       | 167                                    | 164                                   | 166                                   | 151 <sup>e</sup>                          |
| CFI                      | .930                                   | .951                                  | .951                                  | .981                                      |
| TLI                      | .920                                   | .944                                  | .944                                  | .976                                      |
| RMSEA                    | .073                                   | .061                                  | .061                                  | .040                                      |
| Low 90% CI               | .067                                   | .055                                  | .055                                  | .033                                      |
| High 90% CI              | .078                                   | .067                                  | .067                                  | .047                                      |
| SRMR                     | .060                                   | .057                                  | .057                                  | .026                                      |
| Loadings per Factor      | F1 = .629 - .926                       | F1 = .680 - .940                      | F1 = .680 - .940                      | F1 = -.036 - .909                         |
|                          | F2 = .677 - .929                       | F2 = .672 - .871                      | F2 = .671 - .873                      | F2 = .175 - .510                          |
|                          | F3 = .671 - .844                       | F3 = .677 - .929                      | F3 = .677 - .929                      | F3 = .282 - .739                          |
|                          |  | F4 = .671 - .846                      | F4 = .671 - .844                      | F4 = .466 - .541                          |
| Factor Inter-Correlation | .51 - .77                              | .51 - .90                             | S.O. = .682 - .959                    | G = .468 - .909                           |

\*Note. Estimator=MLR. NV=Nurturing Values, SIB=Strength Identification and Boosting, PC=Parenting Context, I=Involvement. F.O.=First-Order. <sup>a</sup> F1=NV & SIB, F2=PC, F3=I. <sup>b</sup> F1=NV, F2=SIB, F3=PC, F4=I. <sup>c</sup> S.O.=Second-order Parenting Factor, F1=NV, F2=SIB, F3=PC, F4=I. <sup>d</sup> G=General Parenting Factor, F1=specific NV Factor, F2=specific SIB Factor, F3=specific PC Factor, F4=specific I Factor. <sup>e</sup> The dfs of the 4-factor Bifactor model were 151 instead of 150 because item 2 had a standardized factor loading >1.0, and we set the loading to be equal in the general and specific factor.

Post hoc power analysis based on the RMSEA (MacCallum, et al., 1996) of the first-order 4-factor model suggested that N = 489 was associated with 100% power to reject a wrong model (df = 164, Null RMSEA = .05, Alternative RMSEA = .08, alpha = .05). See the path diagram of MODEL B in Figure 1.

**Table 2**

*Model fit comparison of the Alternative NPP Models Tested (N = 489).*

|         | NPP models            | Df               | AIC   | BIC   | $\chi^2$ | Chisq $\Delta$ df | $\Delta$ | p      |
|---------|-----------------------|------------------|-------|-------|----------|-------------------|----------|--------|
| MODEL D | 4-factor Bifactor     | 151 <sup>a</sup> | 24145 | 24392 | 324.34   | -                 | -        | -      |
| MODEL B | First-Order 4-factor  | 164              | 24357 | 24550 | 562.63   | 177.409           | 13       | < .001 |
| MODEL C | Second-Order 4-factor | 166              | 24358 | 24542 | 567.47   | 4.140             | 2        | .126   |
| MODEL A | First-Order 3-factor  | 167              | 24516 | 24696 | 727.69   | 69.646            | 1        | < .001 |

\*Note.<sup>a</sup> The dfs of the 4-factor Bifactor model were 151 instead of 150 because item 2 had a standardized factor loading > 1.0, and we set its loading to be equal in the general and specific factors. The “Chisq” column contains standard test statistics, not the robust test that should be reported per model. A robust difference test is a function of two standard (not robust) statistics.

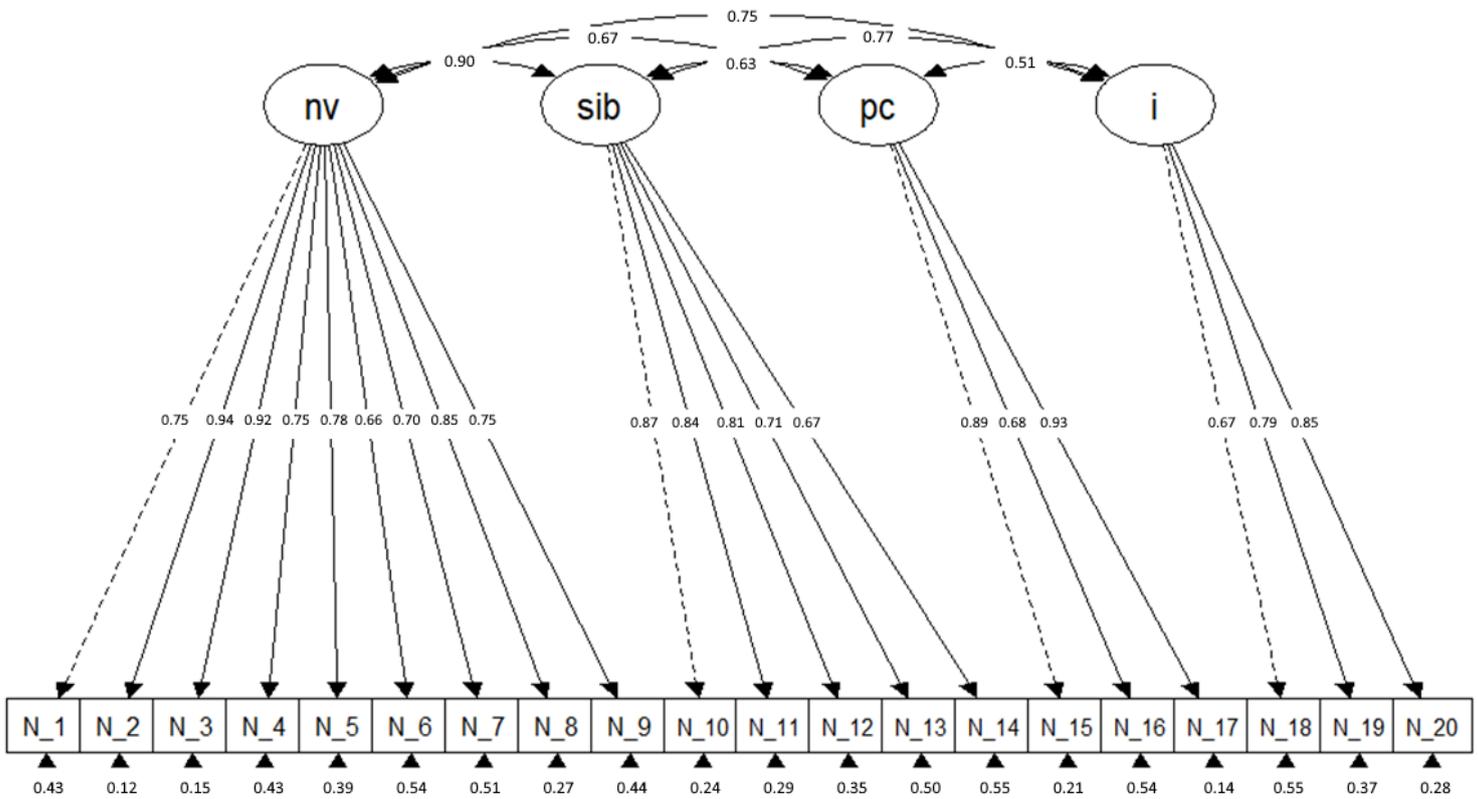


Figure 1. The path diagram of the first-order 4-factor NPP model (MODEL B)

**Internal consistency reliability, model-based reliability, and validity**

For the total NPP, internal consistency reliability was  $glb = .96 \geq \alpha = .96$  [95% CI = .94, .96]. For the NV factor, internal consistency reliability was  $glb = .94 \geq \alpha = .94$  [95% CI = .93, .95]. NV model-based reliability was  $\omega_{Bollen} = .94$ ,  $\omega_{Bentler} = .94$ ,  $\omega_t = .93$ . Model-based convergent validity was AVE = 64. For the SIB factor, internal consistency reliability was  $glb = .91 \geq \alpha = .89$  [95% CI = .87, .90]. SIB model-based reliability and convergent validity were  $\omega_{Bollen} = .89$ ,  $\omega_{Bentler} = .89$ ,  $\omega_t = .88$ , and AVE = 62. For the PC factor, internal consistency reliability was  $glb = .89 \geq \alpha = .86$  [95% CI = .84, .88]. PC model-based reliability and convergent validity were  $\omega_{Bollen} = .88$ ,  $\omega_{Bentler} = .88$ ,  $\omega_t = .89$ , and AVE = 71. For the I factor, internal consistency reliability was  $glb = .83 \geq \alpha = .81$  [95% CI = .78, .84]. Model-based reliability and convergent validity for the I factor were  $\omega_{Bollen} = .81$ ,  $\omega_{Bentler} = .81$ ,  $\omega_t = .81$ , and AVE = 59.

In sum, all the internal consistency reliability, model-based reliability, and model-based validity measures calculated were well above the desired thresholds of acceptability (Hair et al., 2010) both for the total NPP and per factor. Additionally, the greatest lower bound estimate ( $glb$ ) was greater than internal consistency reliability, as expected (Mair, 2018).

**Using Latent Profile Analysis (LPA) to profile parents**

Then LPA, classified respondents based on their scores on positive parenting (Total NPP), emotional wellbeing (MHC-SF EWB), psychological wellbeing (MHC-SF PWB) subjective happiness (SHS), life satisfaction (SWLS), positive emotions (SPANE8-P) and life meaning (MLQ-P), identifying parents' wellbeing profiles. LPA was applied to the total NPP z-score and the same was true for the rest of the LPA inputs.

Four profile models with different variance-covariance specifications were compared. MODEL 1 had equal variances and covariances fixed to zero. MODEL 2 had varying variances and covariances fixed to zero. MODEL 3 had equal variances and equal covariances and MODEL 4 had varying variances and varying covariances. For each specification, profiles with 1-4 groups were tested (16 profile solutions in total). AIC and KIC suggested Model 4 with 3 profiles was optimal whereas BIC suggested Model 2 with 4 profiles. CLC suggested Model 4 with 4 profiles was the optimal model, whereas AWE Model 1 with 4 profiles. Therefore, after the consensus of AIC

and BIC, Model 4 (varying variances and varying covariances) with 3 profiles was considered the optimal, AIC = 7589.652, AWE = 9863.441, BIC = 8302.354, CAIC = 8472.354, CLC = 7251.266, and KIC = 7762.652 (Table 3).

The size of each profile was 50.72% (Profile 1), 35.17% (Profile 2), and 14.11 % (Profile 3). Additionally, the AHP, implemented with the relative importance of AIC = 0.2323, AWE = 0.1129, BIC = 0.2525, CLC = 0.0922, KIC = 0.3101., also suggested the optimal solution was Model 4 with 3 profiles. The percentage of the sample found in the smallest profile (14.11% > 5%) was also a useful metric to support model retention (Ferguson et al., 2020).

**Table 3**

*Model Fit Statistics for the 1-4 Profile Solutions Estimated, having 1-4 Profiles (Groups) Each Based on the Positive Parenting Scores of NPP (N = 489)*

| Model    | Profiles | Model Fit Indicator |                |                |                |                |
|----------|----------|---------------------|----------------|----------------|----------------|----------------|
|          |          | AIC                 | AWE            | BIC            | CLC            | KIC            |
| 1        | 1        | 9735.05             | 9920.43        | 9793.74        | 9709.05        | 9752.05        |
| 1        | 2        | 8692.73             | 8985.40        | 8784.97        | 8650.53        | 8717.73        |
| 1        | 3        | 8370.04             | 8769.71        | 8495.81        | 8311.91        | 8403.04        |
| 1        | 4        | 8093.58             | 8600.46        | 8252.89        | 8019.33        | 8134.58        |
| 2        | 1        | 9735.05             | 9920.43        | 9793.74        | 9709.05        | 9752.05        |
| 2        | 2        | 8510.74             | 8897.17        | 8632.32        | 8454.47        | 8542.74        |
| 2        | 3        | 8134.86             | 8721.93        | 8319.33        | 8048.72        | 8181.86        |
| 2        | 4        | 7823.14             | 8611.08        | 8070.49        | 7706.90        | 7885.14        |
| 3        | 1        | 8266.14             | 9013.68        | 8500.91        | 8156.14        | 8325.14        |
| 3        | 2        | 7844.15             | 8698.81        | 8112.47        | 7718.13        | 7911.15        |
| 3        | 3        | 7776.90             | 8738.81        | 8078.75        | 7634.68        | 7851.90        |
| 3        | 4        | 7739.14             | 8808.11        | 8074.53        | 7580.95        | 7822.14        |
| 4        | 1        | 8266.14             | 9013.68        | 8500.91        | 8156.14        | 8325.14        |
| 4        | 2        | 7709.24             | 9219.95        | 8182.98        | 7485.01        | 7825.24        |
| <b>4</b> | <b>3</b> | <b>7589.65</b>      | <b>9863.44</b> | <b>8302.35</b> | <b>7251.27</b> | <b>7762.65</b> |
| 4        | 4        | 7617.76             | 10654.58       | 8569.43        | 7165.28        | 7847.76        |

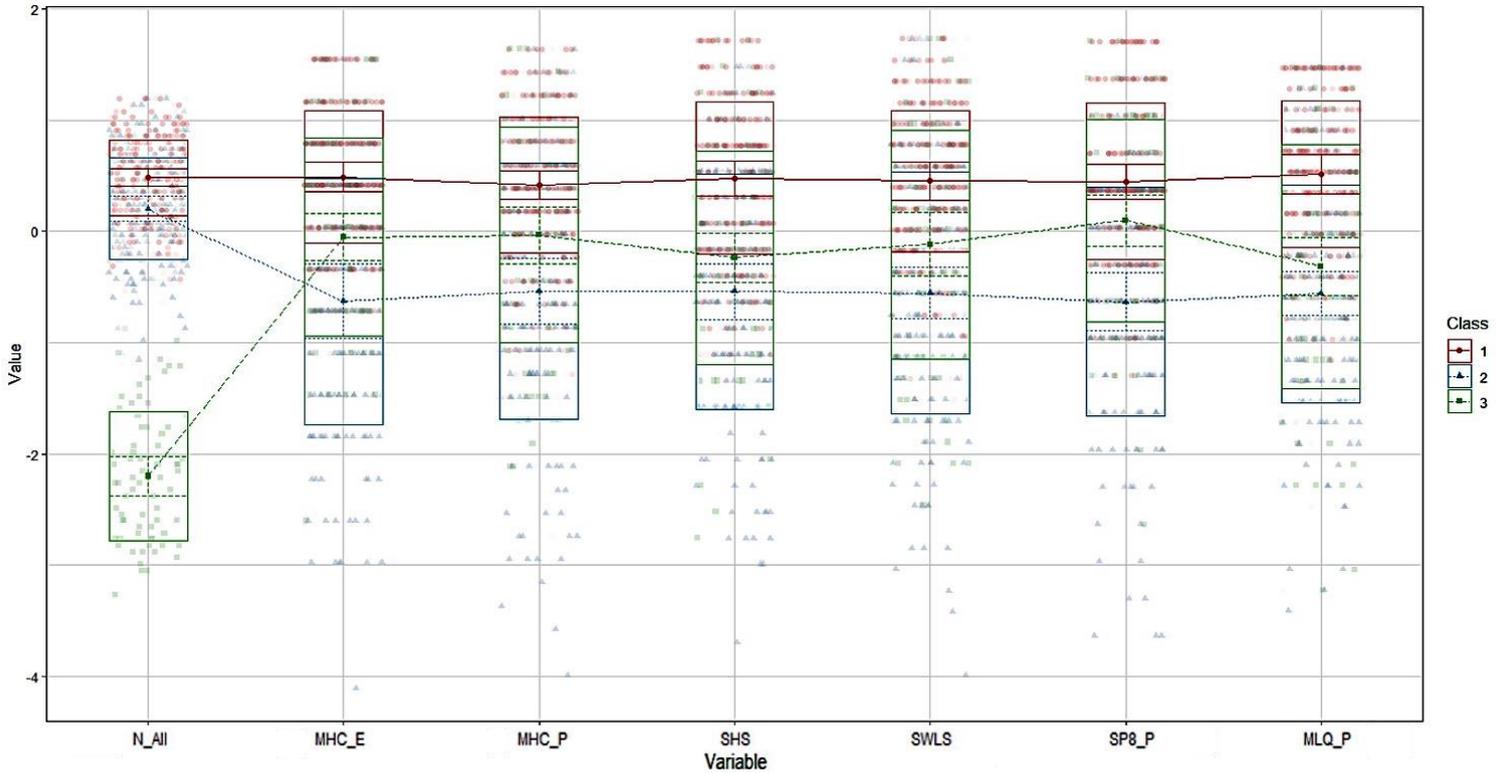
*\*Note.* AIC=Akaike information criterion, AWE=Approximate weight of evidence, BIC=Bayesian information criterion, CLC=Classification Likelihood Criterion, KIC=Kullback information criterion. Bold typeface=optimal model.

Figure 2 contains a plot with the 3 distinct profiles, profiled by MODEL 4 (varying variances and varying covariances) based on the scores in positive parenting and wellbeing (emotional wellbeing, psychological wellbeing, subjective happiness, life satisfaction, positive emotions, and life meaning).

As presented in Figure 2, the parents in Profile 1 (Highest Positive Parenting and Wellbeing) had the highest positive parenting scores, the highest emotional and psychological wellbeing scores, the highest subjective happiness, and life satisfaction scores, combined with the highest scores in positive emotions and life meaning (presented with the red line connecting the red dots across bars). Specifically, Profile 1 had a mean positive parenting score estimate of 0.48 ( $SE = .04, p = .00$ ) and the rest of the estimates ranged from 0.41 (PWB) to 0.52 (MLQ-P), see Table 4.

The parents in Profile 2 (2<sup>nd</sup> Highest Positive Parenting and Lowest Wellbeing) had the 2<sup>nd</sup> highest positive parenting scores, but the lowest emotional and psychological wellbeing scores, the lowest subjective happiness, and life satisfaction scores, combined with the lowest scores in positive emotions and life meaning (presented with the blue line connecting the blue triangles across bars). That is, Profile 2 had a mean parenting score estimate of 0.20 ( $SE = .06, p = .00$ ) and the other estimates ranged from -0.63 (EWB and SPANE-P) to -0.54 (PWB and SHS), see Table 4.

The parents in Profile 3 (Lowest Positive Parenting and 2<sup>nd</sup> Highest Wellbeing) had the lowest Positive Parenting scores of all profiles, but the 2<sup>nd</sup> highest emotional, and psychological wellbeing scores, the 2<sup>nd</sup> highest subjective happiness, and life satisfaction scores, combined with the 2<sup>nd</sup> highest scores in positive emotions and life meaning (presented with the green line connecting the green squares across bars). The parents in Profile 3 had a mean parenting score estimate of -2.20 (*SE* = .09, *p* = .00) and the other estimates ranged from 0.10 SPANE8-P) to -0.31 (MLQ-P). See all the mean estimates in Table 4.



**Figure 2.** The 3 distinct LPA profiles, profiled by MODEL 4 (varying variances and varying covariances) based on the parents’ scores in Positive Parenting (NPP) and Wellbeing constructs.

\*Note. Emotional Wellbeing (EWB), Psychological Wellbeing (PWB), Subjective Happiness (SHS), Life Satisfaction (SWLS), Positive Emotions (SPANE8-P), Life Meaning (MLQ-P), *N* = 489. Colored box plots show the CI for group centroids. Each box shows the SD within each group, (+/- 64% of the cases in a normal distribution). The higher the membership probability for the group, the more visible the raw data point becomes, i.e., data transparency is weighted by the posterior probability of each group.

**Table 4**

Mean Positive Parenting and Wellbeing Score Estimates of the 3 Positive Parenting Profiles Emerging from the LPA

| LPA Inputs                    | Profile 1: Highest Positive parents & Highest WB |           |          | Profile 2: 2 <sup>nd</sup> Highest Positive parents & Lowest WB |           |          | Profile 3: Lowest Positive parents & 2 <sup>nd</sup> Highest WB |           |          |
|-------------------------------|--|-----------|----------|---|-----------|----------|---|-----------|----------|
|                               | <i>M</i> Est                                     | <i>SE</i> | <i>p</i> | <i>M</i> Est  | <i>SE</i> | <i>p</i> | <i>M</i> Est  | <i>SE</i> | <i>p</i> |
| Positive Parenting (NPP)      | <b>0.48</b>                                      | .04       | < .01    | <b>0.20</b>   | .06       | < .01    | <b>-2.20</b>  | .09       | < .01    |
| Emotional Wellbeing (EWB)     | <b>0.49</b>                                      | .07       | < .01    | <b>-0.63</b>  | .17       | < .01    | <b>-0.05</b>  | .11       | .63      |
| Psychological Wellbeing (PWB) | <b>0.41</b>                                      | .06       | < .01    | <b>-0.54</b>  | .15       | < .01    | <b>-0.03</b>  | .13       | .81      |
| Subjective Happiness (SHS)    | <b>0.48</b>                                      | .08       | < .01    | <b>-0.54</b>  | .13       | < .01    | <b>-0.24</b>  | .11       | .04      |
| Life Satisfaction (SWLS)      | <b>0.45</b>                                      | .09       | < .01    | <b>-0.55</b>  | .12       | < .01    | <b>-0.12</b>  | .14       | .42      |
| Positive Emotions (SPANE8-P)  | <b>0.45</b>                                      | .08       | < .01    | <b>-0.63</b>  | .13       | < .01    | <b>0.10</b>   | .12       | .40      |
| Life Meaning Presence (MLQ-P) | <b>0.52</b>                                      | .09       | < .01    | <b>-0.56</b>  | .10       | < .01    | <b>-0.31</b>  | .13       | .02      |
| Profile size                  | 50.72%   |           |          | 35.17%  |           |          | 14.11%  |           |          |

\*Note. *M Est*=Estimate of the Mean (in bold typeface), *SE*=Standard Error.

### LPA cross-validation 1: using different clustering methods

Furthermore, to ensure that we had retained the optimum number of profiles, we also used different clustering (i.e., profiling) methods to identify the number of positive parenting-wellbeing profiles in the dataset. The results of the classifications obtained with eight methods (Ward, Single, Complete, Average, McQuitty, Median, Centroid, Kmeans), cross-validated the LPA results, that the optimal number of Profiles in this dataset was 3, based on the greatest part of the profiling rules.

### LPA cross-validation 2: examining if the profiles are significantly different

The normality assumption was violated (Shapiro-Wilk,  $p < .05$  for NPP, MHC-SF EWB, MHC-SF PWB, SHS, SWLS, SPANE8-P, and MLQ-P). Kruskal-Wallis rank-sum tests were calculated to examine if the 3 LPA profiles differed for each LPA input. Next, a Dunn post hoc test was carried out to locate the significant differences across profiles.

The positive parenting score (NPP) of Profile 1 was significantly different from the score of Profile 2 and 3, Kruskal-Wallis chi-squared (2) = 209.70,  $p < .001$ , with a large effect size (epsilon squared = .43). Profile 1 ( $Mdn = 4.35$ ) perceived more positive parenting than the Profile 2 ( $Mdn = 4.15$ ) and the Profile 3 ( $Mdn = 1.90$ ).

The emotional wellbeing score (MHC-SF EWB) of Profile 1 significantly differed from the score of Profile 2 and 3, Kruskal-Wallis chi-squared (2) = 135.16,  $p < .001$ , with a large effect size (epsilon squared = .28). Profile 1 ( $Mdn = 4.00$ ) perceived more EWB than Profile 2 ( $Mdn = 3.00$ ) and Profile 3 ( $Mdn = 3.67$ ). Note that Profile 3 perceived higher EWB than Profile 2.

The psychological wellbeing score (MHC-SF PWB) of Profile 1 was significantly different from the score of Profile 2 and 3, Kruskal-Wallis chi-squared (2) = 90.18,  $p < .001$ , with a medium effect size (epsilon squared = .19). Profile 1 ( $Mdn = 4.00$ ) perceived more PWB than Profile 2 ( $Mdn = 3.17$ ) and Profile 3 ( $Mdn = 3.83$ ). Again, the PWB of Profile 3 was greater than the PWB of Profile 2.

The subjective happiness score (SHS) of Profile 1 significantly differed from the score of Profile 2 and 3, Kruskal-Wallis chi-squared (2) = 128.17,  $p < .001$ , with a large effect size (epsilon squared = .26). Profile 1 ( $Mdn = 5.75$ ) perceived more subjective happiness than Profile 2 ( $Mdn = 4.50$ ) and Profile 3 ( $Mdn = 5.00$ ). Again, the subjective happiness of Profile 3 was greater than the one of Profile 2.

The life satisfaction score (SWLS) of Profile 1 was significantly different from the score of Profile 2 and 3, Kruskal-Wallis chi-squared (2) = 105.93,  $p < .001$ , with a medium effect size (epsilon squared = .22). Profile 1 ( $Mdn = 5.60$ ) perceived more life satisfaction than Profile 2 ( $Mdn = 4.60$ ) and Profile 3 ( $Mdn = 5.20$ ). Again, the life satisfaction of Profile 3 was greater than the one of Profile 2.

The positive emotions (SPANE8-P) of Profile 1 significantly differed from those of Profile 2 and 3, Kruskal-Wallis chi-squared (2) = 137.62,  $p < .001$ , with a large effect size (epsilon squared = .28). Profile 1 ( $Mdn = 4.00$ ) perceived more positive emotions than Profile 2 ( $Mdn = 3.25$ ) and Profile 3 ( $Mdn = 4.00$ ). Consistently, the positive emotions of Profile 3 were higher than those of Profile 2.

Life meaning (MLQ-P) of Profile 1 was significantly different from the one of Profile 2 and 3, Kruskal-Wallis chi-squared (2) = 144.05,  $p < .001$ , with a large effect size (epsilon squared = .30). Profile 1 ( $Mdn = 6.00$ ) perceived higher life meaning than Profile 2 ( $Mdn = 4.80$ ) and Profile 3 ( $Mdn = 5.40$ ). Consistently, the presence of life meaning in Profile 3 was higher than those in Profile 2.

### The demographics across the LPA profiles

We examined whether the parents' and children's descriptive characteristics were significantly different across the 3 profiles. The normality assumption was violated (Shapiro-Wilk,  $p < .05$  for all variables).

Age was significantly different across the 3 profiles, Kruskal-Wallis chi-squared (2) = 12.00,  $p < .001$ , with a small effect size (epsilon squared = .02). The parents in Profiles 1 and 2 were on average older ( $Mdn = 44$ ) than those in Profile 3 ( $Mdn = 40$ ).

A Fisher's exact test with simulated *p-value* suggested there were significant associations between additional parental/child characteristics and profile membership. Specifically, there were significant associations of the parental role ( $p = .013$ ), parent's employment status ( $p = .001$ ), and annual income ( $p = .002$ ) with profile membership. No significant association was found between parents' education level ( $p = .145$ ) and profile

membership. Whether the child had special needs ( $p = .003$ ), child's gender ( $p = .002$ ), and child's birth order ( $p = .004$ ) were also significantly associated with the parent's profile membership.

Focusing on profile demographics, Profile 1 and 2 included older parents ( $mdn = 44$ ) while Profile 3 younger ( $mdn = 40$ ). Profile 1 contained mostly mothers (81%) vs. 74% (Profile 2) and 61% (Profile 3). Parents in Profile 1 were caring for no special needs children (97%) against 91% (Profile 2) and 86% (Profile 3). In Profile 3, 67% of the parents raised their first child, compared to 57% and 56% in Profile 1 and Profile 2 respectively. In addition, 58% of the parents in Profile 3 were caring for boys compared to 39% (Profile 2) and 44% (Profile 1). In Profile 1, only 86% were employed compared to 87% (Profile 2) and 90% (Profile 3). Nonetheless, 25% of the parents in Profile 1 reported a very high annual income compared to 20% (Profile 2) and 9% (Profile 3).

## Discussion

Results showed that the 4-factor NPP structure was tenable and reliable. The second-order parenting structure was not significantly different than the first-order 4-factor NPP model. However, the good fit of the 4-factor bifactor model fit vs. the first-order 4-factor model, in tandem with the ancillary bifactor measures tested (PUC, ECV) suggested (a) there may be a general parenting factor across all factors, and simultaneously, the 4 specific positive parenting factors proposed by Kyriazos and Stalikas (2019a); (b) NPP total and per factor scores can be used.

Regarding the parents' profiling using positive parenting (measured with NPP) in tandem with different wellbeing constructs (emotional wellbeing, psychological wellbeing, happiness, life satisfaction, positive emotions, life meaning) three positive parenting-wellbeing profiles emerged with adequate size. The largest profile (half of the parents) perceived both high positive parenting and wellbeing, offering preliminary evidence of NPP's criterion validity regarding parental wellbeing. There were significant differences in positive parenting-wellbeing scores between the 3 profiles. Additionally, there were significant associations between parental/child characteristics and profile membership, except for the parent's education level.

### *Interpretation and similarity of the findings*

Elaborating more on the findings on the NPP structure, the CFA confirmed the four NPP factors (Nurturing Values, Strength Identification and Boosting, Parenting Context and Involvement) were robust, reliable, and sufficiently differentiated, replicating past research (Kyriazos & Stalikas, 2019a). NPP showed good internal consistency reliability, model-based reliability, and convergence, corroborating past findings (Kyriazos & Stalikas, 2019a).

Regarding the Latent Profile Analysis (LPA), the three positive parenting-wellbeing profiles that emerged had an adequate size (Spurk et al., 2020). Subsequently, to ensure that the 3 profiles were the optimum solution, we also used eight different clustering methods to examine the number of profiles (or clusters) found in this dataset (Charrad et al., 2014). The results of the cross-validating classifications confirmed that the optimal number of profiles is 3, confirming the LPA results. Generally, the replicability of the profiling across different clustering methods is an accepted method of validating a profile solution (Charrad, et al., 2014; Hennig, 2016; Koutroumbas & Theodoridis, 2008). The significant mean differences found across the 3 profiles, might be considered additional cross-validation of the profiles (Spurk et al., 2020).

More specifically, the parents in Profile 1 (highest positive parenting and highest wellbeing) were the largest group (about 1 in 2 parents). They perceived significantly higher positive parenting and wellbeing than the other two profiles with a large effect size. Further analysis showed that the parents of Profile 1 were older than Profile 3 and as old as Profile 2 (in their mid-forties). They were more mothers than in the other two profiles, caring mostly for girls, to a larger extent than the other two profiles. Most of them were not working, nonetheless, they had the highest annual income compared to the other two profiles. They seem to be more experienced parents than the in the other two profiles because most of them were not first-time-parents. Finally, they had the lowest percentage of special-needs children, of all profiles. These findings confirmed previous research, reporting significant associations between NPP and wellbeing (Kyriazos & Stalikas, 2019a).

In contrast, the parents in Profile 3 (lowest positive parenting but the 2<sup>nd</sup> highest wellbeing) were the smallest group (about 1 in 6 parents). Although they perceived the lowest positive parenting, they reported the second-highest wellbeing (after profile 1), and this difference was significant with a large effect size. Follow-up

analysis showed that the parents of Profile 3 were on average younger than those of Profiles 1 and 2 (in their forties). This profile contained more fathers than in the other two. They were parenting a boy at a larger percentage, than the other two profiles. They seem less experienced than the parents in the other two profiles because 2/3 were first-time parents. This profile contained the highest rate of employed parents, although they had the lowest annual income compared to the other two profiles. Finally, they had the highest percentage of special-needs children of all profiles.

Profile 2 parents (2<sup>nd</sup> highest perceived positive parenting and the lowest wellbeing) contained about 1/3 of the parents. Although they perceived the 2<sup>nd</sup> highest positive parenting, they reported the lowest wellbeing among all parents. This difference from the other two profiles was significant with a large effect size. Further analysis showed that the parents in Profile 2 had the same age as Profile 1 (mid-forties) but were older than those in Profile 3. In this profile, they were more mothers than in Profile 3 but fewer than those in Profile 1. They cared mostly for girls, but to a less extent than in Profile 1 and more than in Profile 3. Most of them were not working, but they had the 2<sup>nd</sup> highest annual income after Profile 1, and higher than Profile 3. They seem to be less experienced parents than those in Profile 1 but more than those in Profile 3, since they contained fewer first-time parents than Profile 3 but not Profile 1. Finally, they had the second-lowest percentage of special-needs children, after Profile 1. Finally, the education level was not significantly associated with profile membership for any of the profiles.

Generally, profiles 2 and 3 agree with a body of wellbeing literature reporting that wellbeing is lower for women (Kahneman et al., 2004; Sirgy, 2021). Past research also argued that parenting is more strongly associated with increased wellbeing for fathers than for mothers, and for those with higher income and this partly confirms Profiles 2 and 3 (Sirgy, 2021). Wellbeing of mothers fluctuates possibly because of the heavy burden of childcare and access to childcare services (Sirgy, 2021). However, note that the present findings suggested that positive parenting plus wellbeing, in tandem with the parental characteristics and child's characteristics (all together) were associated with profile membership. Thus, similarities with existing findings are cautiously noted under the above restriction.

### ***Strengths of the study***

Regarding the findings on the NPP structure, we re-confirmed the stability, robustness, and reliability of NPP, which is noteworthy for an instrument with 20 items in a complex structure of 4 factors. The findings add to the construct validity of this new positive parenting measure because construct validity is not a single pass/fail procedure, but it is built over time by reconfirming a structure across samples, settings, and cultures (Kline, 2020). Additionally, the bifactor results confirmed that NPP can be reliably scored with a general, total positive parenting score and per factor, corroborating existing practice.

Regarding the LPA design, the double cross-validation of the LPA was achieved through (a) the use of 8 additional clustering methods to confirm the LPA results. (b) significant differences were found for the positive parenting-wellbeing scores between the 3 profiles. The use of multiple wellbeing measures offers additional reliability to the LPA findings. Additionally, we examined the parents' and children's descriptive characteristics across the 3 profiles.

### ***Generalizability, limitations, and implications***

This study had adequate sample power, and we can assume the findings have generalizability. Nonetheless, the interpretation should be cautious due to the non-probability sampling method (see Stalikas & Kyriazos, 2019), from a single culture and a single collection method (see Jovanović et al., 2021). This was a sample collected amidst COVID-19 (e.g., Kyriazos, et al., 2021a, Kyriazos, et al., 2021b), therefore its potential impact on the external validity of the study should be considered when interpreting results, as COVID-19 pandemic is a huge extraneous variable. An additional limitation is an imbalanced sample having more mothers than fathers, affecting the comparison of means.

Moreover, there are possible sources of positive response bias pertinent to (a) online research in comparison to paper-and-pencil methods, and; (b) parenting and wellbeing research. More specifically, threats to the validity of online self-report questionnaires are a concern. However, there are conflicting findings comparing online questionnaires to paper-and-pencil administration methods (Streiner et al., 2015). Moreover, parenting measures are often related to social desirability and positive response bias (e.g., Verhoeven et al., 2017). The same is true

for wellbeing measures (Pavot, 2018) and frequently the correlations between self-reports and other (informant) reports are examined to cross-validate self-ratings (e.g., Lyubomirsky & Lepper, 1999). This strategy was not included in the present research.

Despite the limitations, the present findings could be useful for designing or pinpointing public policy on families, using strength-based parenting interventions. It could also add to the existing efforts for more informed, evidence-based interventions on parenting or family counseling, focusing on preserving and sustaining parental wellbeing.

Future research could elaborate on the profiles from the different NPP factors with different wellbeing dimensions. More detailed information about the sample interdependences would be possibly accounted for by implementing multilevel modeling (e.g., Kyriazos, 2018; Kyriazos, 2019; Kyriazos & Stalikas, 2019b). Another useful line of research would be the relationship of positive parenting with parental acceptance/rejection (see Giotsa & Kyriazos, 2019), interpersonal relations (e.g., Giotsa, Kyriazos et al., 2018; Kyriazos & Giotsa, 2019) or school adjustment (e.g., Giotsa, Zergiotis et al., 2018).

## References

- Ainsworth, M. D. S., Blehar, M. C., & Waters, E. (1978). *Patterns of Attachment: A Psychological Study of the Strange Situation*. Earlbaum.
- Akogul, S., & Erisoglu, M. (2017). An Approach for Determining the Number of Clusters in a Model-Based Cluster Analysis. *Entropy*, 19, 452. <https://doi.org/10.3390/e19090452>
- Asplund, J., Lopez, S. J., Hodges, T., & Harter, J. (2007). *The Clifton StrengthsFinder 2.0 technical report: Development and validation*. The Gallup Organization.
- Bandura, A. (1977). *Social Learning Theory*. Prentice-Hall.
- Bauer, D. J., & Curran, P. J. (2004). The integration of continuous and discrete latent variable models: potential problems and promising opportunities. *Psychological Methods*, 9(1), 3-29. <https://doi.org/10.1037/1082-989X.9.1.3>
- Baumrind, D. (1971). Current Patterns of Parental Authority. *Developmental Psychology*, 4(1), 1-103. <https://doi.org/10.1037/h003037>
- Bensmail, H., Celeux, G., Raftery, A. E., & Robert, C. P. (1997). Inference in model-based cluster analysis. *Statistics and Computing*, 7(1), 1-10. <https://doi.org/10.1023/A:1018510926151>
- Bentler, P. M. (1972). A Lower-Bound Method for the Dimension-Free Measurement of Internal Consistency. *Social Science Research*, 1, 343-357. [https://doi.org/10.1016/0049-089X\(72\)90082-8](https://doi.org/10.1016/0049-089X(72)90082-8)
- Berry, J. D., & Jones, W. H. (1995). The Parental Stress Scale: Initial Psychometric Evidence. *Journal of Social and Personal Relationships*, 12, 463-472. <https://doi.org/10.1177/0265407595123009>
- Biernacki, C., & Govaert, G. (1997). Using the classification likelihood to choose the number of clusters. *Computing Science and Statistics*, 451-457. <https://doi.org/10.1109/34.865189>
- Bollen, K. A. (1980). Issues in the Comparative Measurement of Political Democracy. *American Sociological Review*, 45, 370-390. <https://doi.org/10.2307/2095172>
- Boniwell, I., David, S.A., & Ayers, A.C. (Eds.). (2013). *The Oxford Handbook of Happiness*. Oxford University Press.
- Bowlby, J. (1969). *Attachment and Loss: Attachment*. Penguin.
- Bradley, R. H. (2002). Environment and Parenting. In *Handbook of Parenting: Vol. 2: Biology and Ecology of Parenting* (2<sup>nd</sup> ed., pp. 281-314). Erlbaum.
- Bradley, R. H., & Caldwell, B. M. (1995). Caregiving and the Regulation of Child Growth and Development: Describing Proximal Aspects of Caregiving Systems. *Developmental Review*, 15, 38-85. <https://doi.org/10.1006/drev.1995.1002>
- Brown, T. A. (2015). *Confirmatory Factor Analysis for Applied Research*. Guilford Publications.
- Butler, J., & Kern, M. L. (2016). The PERMA-Profilier: A Brief Multidimensional Measure of Flourishing. *International Journal of Wellbeing*, 6, 1-48. <https://doi.org/10.5502/ijw.v6i3.526>
- Cavanaugh, M. A., & Noe, R. A. (1999). Antecedents and consequences of relational components of the new psychological contract. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 20(3), 323-340. [https://doi.org/10.1002/\(SICI\)1099-1379\(199905\)20:3<323::AID-JOB901>3.0.CO;2-M](https://doi.org/10.1002/(SICI)1099-1379(199905)20:3<323::AID-JOB901>3.0.CO;2-M)

- Charrad, M., Ghazzali, N., Boiteau, V., & Niknafs, A. (2014). NbClust: an R package for determining the relevant number of clusters in a data set. *Journal of Statistical Software*, 61, 1-36. <https://doi.org/10.18637/jss.v061.i06>
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49, 71-75. [https://doi.org/10.1207/s15327752jpa4901\\_13](https://doi.org/10.1207/s15327752jpa4901_13)
- Diener, E., Suh, E. M., Lucas, R.E., & Smith, H.L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125(2), 276. <https://doi.org/10.1037/0033-2909.125.2.276>
- Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D. W., Oishi, S., & Biswas-Diener, R. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research*, 97(2), 143-156. <https://doi.org/10.1007/s11205-009-9493-y>
- Elgar, F. J., Waschbusch, D. A., Dadds, M. R., & Sigvaldason, N. (2007). Development and Validation of a Short Form of the Alabama Parenting Questionnaire. *Journal of Child and Family Studies*, 16, 243-259. <https://doi.org/10.1007/s10826-006-9082-5>
- Ferguson, S. L., Moore, E. W. G., & Hull, D. M. (2020). Finding latent groups in observed data: A primer on latent profile analysis in Mplus for applied researchers. *International Journal of Behavioral Development*, 44(5), 458-468. <https://doi.org/10.1177/0165025419881721>
- Fornell, C., & Larcker, D. F. (1981). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research*, 18, 382-388. <https://doi.org/10.1177/002224378101800313>
- Fraley, C., & Raftery, A. E. (2002). Model-based clustering, discriminant analysis and density estimation. *Journal of the American Statistical Association*, 97, 611-631. <https://doi.org/10.1198/016214502760047131>
- Fredrickson, B. L. (1998). Cultivated Emotions: Parental Socialization of Positive Emotions and Self-Conscious Emotions. *Psychological Inquiry*, 9, 279-281. [https://doi.org/10.1207/s15327965pli0904\\_4](https://doi.org/10.1207/s15327965pli0904_4)
- Giotsa, A. Kyriazos, T.A., Mitrogiorgou, E. (2018). Parental Acceptance-Rejection and Interpersonal Anxiety in Young Adults. *Hellenic Journal of Psychology*, 15, 138-150.
- Giotsa, A. Z., Zergiotis, A. N., & Kyriazos, T. (2018). Is the Greek Version of Teacher's Evaluation of Student's Conduct (TESC) a Valid and Reliable Measure? *Psychology*, 9, 1208-1227. <https://doi.org/10.4236/psych.2018.95074>
- Giotsa, A., & Kyriazos, T. A. (2019). Early Childhood Acceptance Rejection Questionnaire: Psychometric Properties of the Greek Version. *Psychology*, 10, 722-741. <https://doi.org/10.4236/psych.2019.105047>
- Hair, J., Black, W., Babin, B., & Anderson, R. (2010). *Multivariate Data Analysis* (7th ed.). Prentice-Hall, Inc.
- Hansen, T., Slagsvold, B., & Moum, T. (2009). Childless and psychological well-being in midlife and old age: An examination of parental status effects across a range of outcomes. *Social Indicators Research*, 94, 343-362. <https://doi.org/10.1007/s11205-008-9426-1>
- Hart, R. (2021). *Positive Psychology: The Basics*. Routledge.
- Hennig, C. (2016). Clustering Strategy and Method Selection. In C. Hennig, M. Meila, F. Murtagh, R. Rocci (Eds.), *Handbook of Cluster Analysis* (pp. 703-730). CRC Press/Chapman & Hall.
- Hu, L., & Bentler, P. M. (1999). Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria versus New Alternatives. *Structural Equation Modeling*, 6, 1-55. <https://doi.org/10.1080/10705519909540118>
- Huta, V. (2012). Linking Peoples' Pursuit of Eudaimonia and Hedonia with Characteristics of Their Parents: Parenting Styles, Verbally Endorsed Values, and Role Modeling. *Journal of Happiness Studies*, 13, 47-61. <https://doi.org/10.1007/s10902-011-9249-7>
- Jackson, P., & Agunwamba, C. (1977). Lower Bounds for the Reliability of the Total Score on a Test Composed of Non-Homogeneous Items: I: Algebraic Lower Bounds. *Psychometrika*, 42, 567-578. <https://doi.org/10.1007/BF02295979>
- James, D., Schumm, W., Kennedy, C., Grigsby, C., Shectman, K., & Nichols, C. (1985). Characteristics of the Kansas Parental Satisfaction Scale among Two Samples of Married Parents. *Psychological Reports*, 57, 163-169. <https://doi.org/10.2466/pro.1985.57.1.163>
- Jovanović, J., Joshanloo, M., Martín-Carbonell, M., Caudek, C., Espejo, B., Checa, I., Krasko, J., Kyriazos, T., Piotrowski, J., Rice, S. P. M., Silva, A. J., Singh, K., Sumi, K., Tong, K. T., Yıldırım, M., & Žemojtel-Piotrowska, M. (2021). Measurement Invariance of the Scale of Positive and Negative Experience Across 13 Countries. *Assessment*, 1-15. <https://doi.org/10.1177/10731911211021494>

- Kahneman, D., Krueger, A. B., Schkade, D. A., Schwarz, N., & Stone, A. A. (2004). A survey method for characterizing daily life experience: The day reconstruction method. *Science*, 306, 1776–1780. <https://doi.org/10.1126/science.1103572>
- Keyes, C. L. (2002). The Mental Health Continuum: From Languishing to Flourishing in Life. *Journal of Health and Social Behavior*, 43, 207-222. <https://doi.org/10.2307/3090197>
- Keyes, C. L. M., Wissing, M., Potgieter, J., Temane, M., Kruger, A., & van Rooy, S. (2008). Evaluation of the Mental Health Continuum-Short Form (MHC-SF) in Setswana-Speaking South Africans. *Clinical Psychology and Psychotherapy*, 15, 181-192. <https://doi.org/10.1002/cpp.572>
- Kline, R. B. (2016). *Principles and Practice of Structural Equation Modeling: Methodology in the social sciences* (4th ed.). Guilford Press.
- Kline, R. B. (2020). *Becoming a Behavioral Science Researcher* (2nd ed.). Guilford Press.
- Koutroumbas, K., & Theodoridis, S. (2008). *Pattern recognition*. Academic Press.
- Kyriazos, T. (2017). *Reliability of psychometric instruments*. In M, Galanakis, C, Pezirkianidis, A. Stalikas (Eds), Basic aspects of psychometrics, (p. 85-126). Topos.
- Kyriazos, T. A. (2018). Applied Psychometrics: The Application of CFA to Multitrait-Multimethod Matrices (CFA-MTMM). *Psychology*, 9, 2625-2648. <https://doi.org/10.4236/psych.2018.912150>
- Kyriazos, T. A. (2019). Applied Psychometrics: The Modeling Possibilities of Multilevel Confirmatory Factor Analysis (MLV CFA). *Psychology*, 10, 777-798. <https://doi.org/10.4236/psych.2019.106051>
- Kyriazos, T. A., & Giotsa, A. (2019). Interpersonal Rejection Anxiety Questionnaire (IRAQ): Psychometric Properties of the Greek Version. *Psychology*, 10, 1542-1563. <https://doi.org/10.4236/psych.2019.1011101>
- Kyriazos, T. A., & Stalikas, A. (2018). Positive Parenting or Positive Psychology Parenting? Towards a Conceptual Framework of Positive Psychology Parenting. *Psychology*, 9, 1761-1788. <https://doi.org/10.4236/psych.2018.97104>
- Kyriazos, T. A., & Stalikas, A. (2019a). Nicomachus-Positive Parenting (NPP): Development and Initial Validation of a Parenting Questionnaire within the Positive Psychology Framework. *Psychology*, 10, 2115-2165. <https://doi.org/10.4236/psych.2019.1015136>
- Kyriazos, T. A., & Stalikas, A. (2019b). Alabama Parenting Questionnaire—Short Form (APQ-9): Evidencing Construct Validity with Factor Analysis, CFA MTMM and Measurement Invariance in a Greek Sample. *Psychology*, 10, 1790-1817. <https://doi.org/10.4236/psych.2019.1012117>
- Kyriazos, T., & Stalikas, A. (2021). Psychometric Evidence of the 10-Item Connor-Davidson Resilience Scale (CD-RISC10, Greek Version) and the Predictive Power of Resilience on Well-Being and Distress. *Open Journal of Social Sciences*, 9, 280-308. <https://doi.org/10.4236/jss.2021.911022>
- Kyriazos, T. A., Stalikas, A., Prassa, K., & Yotsidi, V. (2018). A 3-Faced Construct Validation and a Bifactor Subjective Well-Being Model Using the Scale of Positive and Negative Experience, Greek Version. *Psychology*, 9, 1143-1175. <https://doi.org/10.4236/psych.2018.95071>
- Kyriazos, T, Galanakis, M., Karakasidou, E., Stalikas, A. (2021a). Well-Being Implications of the COVID-19 Quarantine Using Machine Learning: Are Creative Activities a Ubiquitous Classifier? *Personality and Individual Differences*, 181, 110980. <https://doi.org/10.1016/j.paid.2021.110980>
- Kyriazos, T., Galanakis, M., Katerelos, I., & Stalikas, A. (2021b). Does the Pollyannaish View on Life Hold during Early COVID-19 Quarantine? Modeling the Effects of Positive Emotions, Hope, Optimism and Life Meaning on Life Satisfaction. *Open Journal of Social Sciences*, 9, 315-338. <https://doi.org/10.4236/jss.2021.910023>
- Lovejoy, M. C., Weis, R., O'Hare, E., & Rubin, E. C. (1999). Development and Initial Validation of the Parent Behaviour Inventory. *Psychological Assessment*, 11, 534-545. <https://doi.org/10.1037/1040-3590.11.4.534>
- Luhmann, M., Hofmann, W., Eid, M., & Lucas, R. E. (2012). Subjective well-being and adaptation to life events: A meta-analysis. *Journal of Personality and Social Psychology*, 102, 592–615. <https://doi.org/10.1037/a0025948>
- Lyubomirsky, S., & Lepper, H. (1999). A Measure of Subjective Happiness: Preliminary Reliability and Construct Validation. *Social Indicators Research*, 46, 137-155. <https://doi.org/10.1023/A:1006824100041>
- MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power Analysis and Determination of Sample Size for Covariance Structure Modeling. *Psychological Methods*, 1, 130. <https://doi.org/10.1037/1082-989X.1.2.130>

- Maccoby, E. E., & Martin, J. A. (1983). Socialization in the Context of the Family: Parent-Child Interaction. In E. M. Hetherington, & P. H. Mussen (Eds.), *Handbook of Child Psychology: Vol. 4. Socialization, Personality, and Social Development* (pp. 1-101). Wiley.
- Mair, P. (2018). *Modern Psychometrics with R*. Springer. <https://doi.org/10.1007/978-3-319-93177-7>
- Margolis, R., & Myrskylä, M. (2015). Parental well-being surrounding first birth as a determinant of further parity progression. *Demography*, 52, 1147–1166. <https://doi.org/10.1007/s13524-015-0413-2>
- Masyn, K. E. (2013). *25 latent class analysis and finite mixture modeling*. The Oxford handbook of quantitative methods, 2, 551.
- McDermott, R.C. & Levant, R., & Hammer, J.H. & Hall, R.J. & McKelvey, D.K. & Jones, Z. (2017) Further examination of the factor structure of the Male Role Norms Inventory-Short Form (MRNI-SF): measurement considerations for women, men of color, and gay men. *Journal of counseling psychology.*, 64 (6). pp. 724-738. <https://doi.org/10.1037/cou0000225>
- McDonald, R.P. (1999). *Test Theory: A Unified Treatment*. Erlbaum.
- Musick, K., Meier, A., & Flood, S. (2016). How parents fare: Mothers' and fathers' subjective wellbeing in time with children. *American Sociological Review*, 81, 1069–1095. <https://doi.org/10.1177/0003122416663917>
- Nelson, S. K., Kushlev, K., & Lyubomirsky, S. (2014). The pains and pleasures of parenting: When, why, and how is parenthood associated with more or less wellbeing? *Psychological Bulletin*, 140, 846–869 <https://doi.org/10.1037/a0035444>
- Nelson, S. K., Kushlev, K., English, T., Dunn, E. W., & Lyubomirsky, S. (2013). In defense of parenthood: Children are associated with more joy than misery. *Psychological Science*, 24, 3–10. <https://doi.org/10.1177/0956797612447798>
- Nelson-Coffey, S. K. (2018). Married...with children: The science of well-being in marriage and family life. In E. Diener, S. Oishi, & L. Tay (Eds.), *Handbook of well-being*. DEF Publishers
- Nelson-Coffey, S. K., Borelli, J. L., & River, L. M. (2017). Attachment avoidance, but not anxiety, minimizes the joys of caregiving. *Attachment & Human Development*, 19, 504–531. <https://doi.org/10.1080/14616734.2017.1326060>
- Pavot, W. (2018). The Cornerstone of Research on Subjective Well-Being: Valid Assessment Methodology. In E. Diener, S. Oishi, & L. Tay (Eds.), *Handbook of Well-Being* (pp. 1-11). DEF Publishers.
- Pavot, W., & Diener, E. (1993). The Affective and Cognitive Context of Self-Reported Measures of Subjective Well-Being. *Social Indicators Research*, 28, 1-20. <https://doi.org/10.1007/BF01086714>
- Peterson, C., & Seligman, M.E.P. (2004). *Character Strengths and Virtues: A Handbook and Classification*. Oxford University Press.
- R Development Core Team (2022). *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing.
- Rath, T. (2007). *StrengthsFinder 2.0*. Simon and Schuster.
- Reid, C. A. Y., Roberts, L. D., Roberts, C. M., & Piek, J. P. (2015). Towards a Model of Contemporary Parenting: The Parenting Behaviours and Dimensions Questionnaire. *PLoS ONE*, 10, Article e0114179. <https://doi.org/10.1371/journal.pone.0114179>
- Reise, S. P., Bonifay, W. E., & Haviland, M. G. (2013). Scoring and Modeling Psychological Measures in the Presence of Multidimensionality. *Journal of Personality Assessment*, 95, 129-140. <https://doi.org/10.1080/00223891.2012.725437>
- Reise, S. (2012). The rediscovery of bifactor measurement models. *Multivariate Behavioral Research*, 47, 667-696. <https://doi.org/10.1080/00273171.2012.715555>
- Rodriguez, A., Reise, S. P., & Haviland, M. G. (2016). Evaluating bifactor models: Calculating and interpreting statistical indices. *Psychological Methods*, 21(2), 137–150. <https://doi.org/10.1037/met000045>
- Ruini, C. (2017). *Positive psychology in the clinical domains: Research and practice*. Springer.
- Ryan, R.M., & Deci, E.L. (2001). On Happiness and Human Potentials: A Review of Research on Hedonic and Eudaimonic Well-Being. *Annual Review of Psychology*, 52, 141-166. <https://doi.org/10.1146/annurev.psych.52.1.141>
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57, 1069–1081. <https://doi.org/10.1037/0022-3514.57.6.1069>
- Ryff, C. D. (2018). Eudaimonic well-being: Highlights from 25 years of inquiry. In K. Shigemasu, S. Kuwano, T. Sato, & T. Matsuzawa (Eds.), *Diversity in harmony—insights from psychology* (pp. 375–395). Wiley.

- Saaty, T. L. (1990). An Exposition on the AHP in Reply to the Paper “Remarks on the Analytic Hierarchy Process.” *Management Science*, 36(3), 259–268. <http://www.jstor.org/stable/2631947>
- Seligman, M.E.P. (2002). *Authentic Happiness: Using the New Positive Psychology to Realize Your Potential for Lasting Fulfillment*. Free Press.
- Seligman, M.E.P. (2011). *Flourish: A New Understanding of Happiness and Wellbeing and How to Achieve Them*. Nicholas Brealey.
- Sheppard, M. (2010). The Parent Concerns Questionnaire: A Reliable and Valid Common Assessment Framework for Child and Family Social Care. *British Journal of Social Work*, 40, 371-390. <https://doi.org/10.1093/bjsw/bcn163>
- Sirgy, M. J. (2021). *The Psychology of Quality of Life: Wellbeing and Positive Mental Health (3<sup>rd</sup> Ed.)*. Springer Nature. <https://doi.org/10.1007/978-3-030-71888-6>
- Spurk, D., Hirschi, A., Wang, M., Valero, D., Kauffeld, S. (2020). Latent profile analysis: A review and “how to” guide of its application within vocational behavior research. *Journal of Vocational Behavior*, 120, 103445. <https://doi.org/10.1016/j.jvb.2020.103445>
- Stalikas, A. & Kyriazos, T. (2019). *Research Methods and Statistics Using R*. Topos.
- Stalikas, A., Kyriazos, T. A., Yotsidi, V., & Prassa, K. (2018). Using Bifactor EFA, Bifactor CFA and Exploratory Structural Equation Modeling to Validate Factor Structure of the Meaning in Life Questionnaire, Greek Version. *Psychology*, 9, 348-371. <https://doi.org/10.4236/psych.2018.93022>
- Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The Meaning in Life Questionnaire: Assessing the Presence of and Search for Meaning in Life. *Journal of Counseling Psychology*, 53, 80-93. <https://doi.org/10.1037/0022-0167.53.1.80>
- Streiner, D. L., Norman, G. R., & Cairney, J. (2015). *Health Measurement Scales: A Practical Guide to Their Development and Use (5th ed.)*. Oxford University Press. <https://doi.org/10.1093/med/9780199685219.001.0001>
- Stucky, B. D., & Edelen, M. O. (2014). Using hierarchical IRT models to create unidimensional measures from multidimensional data. In S. P. Reise & D. A. Revicki (Eds.), *Handbook of item response theory modeling: Applications to typical performance assessment* (pp. 183–206). Routledge/Taylor & Francis Group.
- Stucky, B. D., Edelen, M. O., Vaughan, C. A., Tucker, J. S., & Butler, J. (2014). The Psychometric Development and Initial Validation of the DCI-A Short Form for Adolescent Therapeutic Community Treatment Process. *Journal of Substance Abuse Treatment*, 46, 516-521. <https://doi.org/10.1016/j.jsat.2013.12.005>
- Vargha, A., & Delaney, H. D. (2000). A Critique and Improvement of the CL Common Language Effect Size Statistics of McGraw and Wong. *Journal of Educational and Behavioral Statistics*, 25, 101-132. <https://doi.org/10.3102/10769986025002101>
- Verhoeven, M., Deković, M., Boddén, D. & van Baar, A. L. (2017). Development and Initial Validation of the Comprehensive Early Childhood Parenting Questionnaire (CECPAQ) for Parents of 1 - 4 Year-Olds. *European Journal of Developmental Psychology*, 14, 233-247. , <https://doi.org/10.1080/17405629.2016.1182017>
- Werts, C. E., Linn, R. L., & Jöreskog, K. G. (1974). Intraclass reliability estimates: Testing structural assumptions. *Educational and Psychological measurement*, 34(1), 25-33. <https://doi.org/10.1177/001316447403400104>
- Zumbo, B.D. & Chan, E.K.H. (2014). Setting the Stage for Validity and Validation in Social, Behavioral, and Health Sciences: Trends in Validation Practices. In B.D. Zumbo and E.K.H. Chan (Eds.), *Validity and Validation in Social, Behavioral, and Health Sciences* (pp.3–8). Springer International Publishing.

## Supplementary Material

The Supplementary Material for this article can be found online at [https://doi.org/10.12681/psy\\_hps.31757](https://doi.org/10.12681/psy_hps.31757)

# Σκιαγραφώντας τα προφίλ θετικής γονικότητας και ευζωίας με τη χρήση του ερωτηματολογίου ΝΙΚΟΜΑΧΟΣ – Θετική Γονικότητα

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| ΛΕΞΕΙΣ ΚΛΕΙΔΙΑ   | ΠΕΡΙΛΗΨΗ  |
|--|---|
| Γονικότητα,<br>θετική γονικότητα,<br>Ανάλυση Λανθάνοντων<br>Προφίλ,<br>Ευζωία,<br>ΝΙΚΟΜΑΧΟΣ-Θετική<br>Γονικότητα,<br>NPP,<br>LPA   | Η παρούσα μελέτη επικεντρώθηκε στον επανέλεγχο της εγκυρότητας και αξιοπιστίας της 4-παραγοντικής δομής του νέου ερωτηματολογίου ΝΙΚΟΜΑΧΟΣ-Θετική Γονικότητα. Οι βαθμολογίες θετικής γονικότητας χρησιμοποιήθηκαν μαζί με πολλαπλές βαθμολογίες δεικτών ευζωίας (συναισθηματικής, ψυχολογικής, ευτυχίας και ικανοποίησης από τη ζωή, θετικών συναισθημάτων, ύπαρξης νοήματος) προκειμένου να δημιουργηθούν γονικά προφίλ με την ανάλυση λανθάνοντων προφίλ (ΑΛΠ). Συμμετείχαν 489 γονείς/κηδεμόνες με τουλάχιστον ένα παιδί ηλικίας 7-13 ετών. Η 4-παραγοντική δομή και η αξιοπιστία του ΝΙΚΟΜΑΧΟΣ επιβεβαιώθηκαν. Το στατιστικά σημαντικά διαφορετικό 4-παραγοντικό αμφιπαραγοντικό μοντέλο έναντι του 4-παραγοντικού μοντέλου πρώτης τάξης υπέδειξε ότι ενδέχεται να υπάρχει ένας γενικός παράγοντας γονικότητας ταυτόχρονα με τους 4 ειδικούς παράγοντες θετικής γονικότητας. Οι βοηθητικοί δείκτες αμφιπαραγοντικής προσαρμογής υπέδειξαν επίσης ότι δύναται να χρησιμοποιούνται αξιόπιστα τόσο οι συνολικές όσο και οι ανά-παράγοντα βαθμολογίες του ΝΙΚΟΜΑΧΟΣ. Όσον αφορά την ΑΛΠ, προέκυψαν 3 προφίλ θετικής γονικότητας-ευζωίας με επαρκές μέγεθος. Το προφίλ 1 (περίπου 50% των συμμετεχόντων) είχε τις υψηλότερες βαθμολογίες θετικής γονικότητας και ευζωίας. Το προφίλ 2 (περίπου 35% των συμμετεχόντων) είχε τη 2η υψηλότερη θετική γονικότητα και τη χαμηλότερη ευζωία. Το προφίλ 3 (περίπου 15% των συμμετεχόντων) είχε τη χαμηλότερη θετική γονικότητα και τη 2η υψηλότερη ευζωία. Η παραπάνω λύση των 3 προφίλ δι-επικυρώθηκε με 8 διαφορετικές μεθόδους ομαδοποίησης. Οι διαφορές στη μέση βαθμολογία μεταξύ των προφίλ ήταν στατιστικά σημαντικές με μεγάλο μέγεθος επίδρασης, υποδηλώνοντας ότι τα προφίλ διέφεραν σημαντικά. Υπήρξαν στατιστικά σημαντικές συσχετίσεις των δημογραφικών των γονέων (ηλικία, ρόλος, επίπεδο εκπαίδευσης, εργασιακή κατάσταση, ετήσιο εισόδημα), των παιδιών (φύλο, ειδικές ανάγκες, σειρά γέννησης) και της κατανομής στα 3 προφίλ. |
| ΣΤΟΙΧΕΙΑ ΕΠΙΚΟΙΝΩΝΙΑΣ  |   |
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