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Research Article

Profiles of Mindfulness and Resilience: Latent Configurations of Psychological Resources and Their Links to Well-Being and Adversity

Krešimir Prijatelj*[a], Đana Ravlić [a],

[a] Department of Psychology, University of Zadar, Zadar, Croatia

Abstract

Dispositional mindfulness and psychological resilience are increasingly viewed as important personal resources for psychological adjustment, yet their joint configurations remain underexplored. This study identified latent profiles based on mindfulness facets and resilience and examined their links with mental health, life satisfaction, and contextual risk and protective factors in emerging adults. Participants were 621 university students aged 18–29 years (88.6% female) who completed measures of mindfulness, resilience, mental health, life satisfaction, violence exposure, and sociodemographic and relational characteristics. Latent profile analysis identified three profiles: high-resource, moderate-resource/cognitively mindful, and low-resource. Both higher-resource profiles showed better mental health and greater life satisfaction than the low-resource profile, but did not differ significantly from each other. Multinomial regression indicated that more positive family relationships were associated with greater likelihood of membership in both higher-resource profiles (ORs = 1.48-1.63), and that being in a romantic relationship increased the likelihood of membership in the moderate-resource profile (OR = 1.87), whereas more frequent violence exposure reduced the likelihood of membership in the moderate-resource profile relative to the low-resource group (OR = 0.78). Socioeconomic status was not a significant predictor. The three-profile solution was replicated in sensitivity analyses including the observing facet. Overall, the findings suggest that distinct configurations of mindfulness and resilience are meaningfully associated with psychological well-being and differ according to relational context and violence exposure.

Keywords: mindfulness; psychological resilience; latent profile analysis; mental health; life satisfaction

Table of Contents

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*Corresponding author at: Department of Psychology, University of Zadar, Zadar, Croatia
E-mail: kresimir.prijatelj@gmail.com

Mindfulness and psychological resilience have emerged as central constructs in contemporary models of psychological adaptation and well-being. Mindfulness is conceptualized as a multifaceted tendency to attend to present-moment experiences with openness and nonjudgment (Baer et al., 2006; Brown & Ryan, 2003), and has been linked to enhanced emotion regulation, reduced psychological distress, and greater subjective well-being (Brown & Ryan, 2003; Brown et al., 2015; Lindsay & Creswell, 2017).

Resilience, understood as the capacity to recover from adversity and maintain psychological balance (Smith et al., 2008), similarly plays a protective role across diverse mental health outcomes (Cosco et al., 2017; Kalisch et al., 2017). Although mindfulness and resilience are positively related and may mutually reinforce one another, they are conceptually distinct. Mindfulness primarily refers to a mode of attention and awareness characterized by present-moment focus and nonjudgmental acceptance, whereas resilience refers more broadly to adaptive recovery and the capacity to maintain or regain psychological functioning in the face of adversity. While these constructs are often studied independently, accumulating evidence

suggests they may jointly shape how individuals navigate stress, adversity, and relational contexts (Bajaj & Pande, 2016; Chmitorz et al., 2018).

Recent methodological developments underscore the value of person-centered approaches for understanding heterogeneity in mindfulness and resilience.

Latent profile analysis (LPA) enables the identification of subgroups characterized by distinct combinations of psychological attributes, providing insights that are not captured by variable-centered methods (Masyn, 2013; Nylund et al., 2007; Morin et al., 2016, 2018; Roberts et al., 2023). Studies applying LPA to mindfulness indicators have identified profiles that vary in emotional functioning and regulatory strategies (Bravo et al., 2016; 2018; Bodenlos et al., 2013; Pearson et al., 2021; Roberts et al., 2023), while resilience-focused profiles have been associated with differential levels of mental health, coping, and stress reactivity, in line with correlational and meta-analytic evidence linking higher resilience to lower psychological distress and better functioning (Górska et al., 2022; Janousch et al., 2022; Jeamjitvibool et al., 2022). This literature provides initial support for the expectation that individuals differ meaningfully in their combined levels of mindfulness and resilience, and that such jointly defined profiles may relate systematically to psychological outcomes.

The broader stress and trauma literature further highlights the importance of contextual and developmental risk factors. Exposure to violence, particularly chronic or repeated violence, has been consistently associated with disruptions in emotion regulation, attentional control, stress-response systems, and a wide range of adverse health outcomes (Hughes et al., 2017; Heleniak et al., 2016; McLaughlin et al., 2020), all of which may undermine both mindfulness and resilience. Conversely, socioeconomic advantages, supportive family relationships, and stable romantic partnerships function as protective factors that foster regulatory capacities, positive affective functioning, and psychological resources (Boylan et al., 2018; Gómez-López et al., 2019; Ozbay et al., 2008; Proulx et al., 2007; Umberson et al., 2023). These contextual influences, therefore, likely shape the probability of belonging to higher- or lower-resource psychological profiles. At the same time, identifying the stability of profile structures across alternative model specifications is essential for establishing the robustness of person-centered findings.

Research on mindfulness measurement indicates that the “observing” facet behaves differently across populations, particularly among individuals without meditation experience, where it may correlate positively with distress (Aguado et al., 2015; Asensio-Martínez et al., 2019; Truijens et

al., 2016). Sensitivity analyses that include or exclude this facet thus provide an important methodological check on the validity and stability of latent profile solutions (Van Dam et al., 2009).

Dispositional mindfulness and psychological resilience can be understood as key personal resources within contemporary models of psychological adaptation, and their joint role can be further clarified through two theoretical perspectives: the Broaden-and-Build theory of pleasant emotions and the Conservation of Resources theory. According to the Broaden-and-Build framework (Fredrickson, 2001, 2013), frequent experiences of pleasant emotions, which mindfulness may facilitate by promoting present-moment awareness, nonjudgment, and enhanced regulatory capacity, broaden individuals' momentary thought-action repertoires and, over time, contribute to the development of enduring psychological resources, including resilience, emotional regulation, and flexible coping strategies (Fredrickson, 2001, 2013; Garland et al., 2015).

From the perspective of the Conservation of Resources theory (Hobfoll, 1989, 2001), mindfulness and resilience represent personal resources that help individuals protect themselves against resource loss associated with stress and traumatic experiences, whereas chronic or repeated exposure to violence functions as a substantial source of resource depletion that undermines regulatory and adaptive capacities. Consistent with this theoretical framework, socioeconomic advantages, supportive family relationships, and stable romantic partnerships may function as "resource caravans" that facilitate the accumulation and maintenance of personal resources, increasing the likelihood of developing high-resource configurations of mindfulness and resilience, whereas adverse contextual conditions heighten the risk of lower-resource psychological profiles.

Integrating insights from these models, individuals' latent configurations of mindfulness and resilience can be expected to reflect differing levels of available resources and to show systematic associations with well-being, mental health, and experiences of violence. Based on this theoretical and empirical foundation, the present study was designed to investigate latent profiles integrating mindfulness facets and resilience. In addition, associations with mental health and life satisfaction were examined, the influence of violence exposure and contextual protective factors on profile membership was evaluated, and the robustness of the identified structure was tested using alternative model specifications. A latent profile approach was adopted to identify naturally occurring subgroups based on multiple indicators of mindfulness

and resilience and to explore their correlates. The conceptual framework assumes that combinations of mindfulness facets (acting with awareness, nonjudging, nonreactivity, describing) and resilience form distinct patterns that predict differences in psychological well-being and are shaped by prior adversity and contextual resources.

The present study examined several hypotheses concerning person-centered configurations of mindfulness and resilience. First, it was expected that multiple latent profiles would emerge, reflecting high, moderate, and low combinations of mindfulness and resilience (H1). Second, it was anticipated that individuals in higher-resource profiles, characterized by higher mindfulness and resilience, would report better mental health and greater life satisfaction than those in lower-resource profiles (H2). Third, it was hypothesized that experiences of violence, especially if repeated, would increase the likelihood of belonging to lower-resource profiles, whereas higher socioeconomic status, positive family relationships, and being in a stable romantic relationship would predict membership in higher-resource profiles (H3). Finally, it was expected that the overall profile structure would remain stable when alternative model specifications are applied, such as including or excluding the observing facet of mindfulness (H4).

Method

Participants

Participants were 621 emerging adults between 18 and 29 years (*M* = 22.660, *SD*= 2.760). The majority identified as women (n = 550, 88.6%), with 71 men (11.4%). Slightly more than half of the participants reported being in a romantic relationship at the time of the study (n = 330, 53.1%), while 291 (46.9%) were not in a relationship. Perceived family relationship quality indicated that most participants rated their family relationships as average to good: 4.0% chose “very poor”, 10.0% “poor”, 26.7% “average”, 37.4% “good”, and 21.9% “very good” (*M* = 3.630, *SD*= 1.055). Socioeconomic status (SES) was most frequently rated as average (58.8%), with 2.1% reporting “Far below average”, 13.5% “Below average”, 24.3% “Above average”, and 1.3% “Far above average” (*M* = 3.090, *SD*= 0.711).

Instruments

Dispositional mindfulness was measured with the Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006), using the validated Croatian translation (Gračanin et al., 2017). The FFMQ includes 39 items that index a general tendency to attend to one’s experiences in an

attentive and non-intrusive way. It distinguishes five facets of mindfulness: noticing internal sensations and external events (observing), verbally labelling inner experiences (describing), carrying out activities with deliberate attention rather than on "autopilot" (acting with awareness), adopting a non-evaluative stance toward thoughts and feelings (nonjudging), and allowing internal experiences to unfold without impulsive responding (nonreactivity). Participants responded to each item (e.g., "Even when I'm feeling terribly upset, I can find a way to put it into words.") on a five-point Likert scale from 1 (Never) to 5 (Always). Higher scores indicate higher levels of dispositional mindfulness. Reliability estimates indicated satisfactory to excellent internal consistency for all subscales: Observing (α = .787; ωh = .793), Describing (α = .909; ωh = .912), Acting with awareness (α = .896; ωh = .895), Nonjudging (α = .872; ωh = .877), and Nonreactivity (α = .773; ωh = .781).

Frequency of violence exposure was assessed with a single item asking participants whether they had ever experienced violence. Response options were 0 = "Never", 1 = "Once", and 2 = "More than once". For the purposes of analysis, responses were coded so that higher values reflected more frequent exposure to violence.

Life satisfaction was measured with a single summary question based on the procedure described by Lauri Korajlija and colleagues (2019). Respondents indicated the extent of their satisfaction with life in general on a ten-point scale, where 1 represented "Completely dissatisfied" and 10 represented "Completely satisfied." Higher numerical values on this scale corresponded to higher levels of subjective life satisfaction.

Overall mental health was evaluated with the Mental Health Inventory - 5 (MHI 5; Berwick et al., 1991; Davies et al., 1988). This brief instrument consists of five items that probe general psychological well-being and emotional distress over the previous month, covering emotional, cognitive and interpersonal aspects of functioning. Participants reported how often they experienced specific feelings and states using a six-point response format ranging from 1 ("Never") to 6 ("Always"). After recoding, higher total scores indicate fewer psychological difficulties and therefore better mental health. The Croatian adaptation (Slišković, 2020) showed good internal reliability in the present sample (α = .851; ωh = .863).

Sociodemographic characteristics were assessed with a brief questionnaire. Participants reported their age (in years), gender, and current romantic relationship status (0 = "not in a romantic relationship", 1 = "in a romantic relationship"). Family relationship quality was

measured with a single item asking participants to rate their overall family relationships on a five-point scale with the following response options: “very poor”, “poor”, “average”, “good”, and “very good”, with higher scores indicating better perceived family relationships. Socioeconomic status (SES) was measured with a single item asking participants to evaluate their socioeconomic standing on a five-point scale with the following response options: “far below average”, “below average”, “average”, “above average”, and “far above average”. Higher scores reflected higher perceived SES.

Procedure

Data were collected online via Google Forms during two months in the first half of 2022. On the opening page, participants received a brief description of the study aims, the main questionnaire content, and the approximate duration, together with information on anonymity, confidentiality of responses, and their right to discontinue participation at any point without penalty. Only individuals who provided electronic informed consent could proceed to the questionnaire, and upon completion they were thanked and provided with contact details for national crisis and counselling helplines in case the content elicited emotional distress. Recruitment followed a snowball sampling strategy, starting from students at the University of Zadar and other Croatian universities, who were invited via social networks and email and asked to forward the survey link to other adults in their surroundings.

Ethical Considerations

The study protocol was approved by the Ethics Committee of the University of Zadar.

Results

Latent profile analysis

Latent profile analyses were conducted on the z standardised indicators describing, acting with awareness, nonjudging of inner experience, nonreactivity to inner experience, and resilience. Models with 1 to 5 profiles were estimated with equal variances and zero covariances. Fit indices for the main indicator set are presented in Table 1. As the number of profiles increased, AIC and SABIC decreased monotonically, indicating improved fit with added complexity. BIC was lowest for the four-profile model (BIC = 8312.10) followed by the five-profile model (BIC = 8327.00) and the three profile model (BIC = 8388.69). For all solutions with two or more profiles, the bootstrapped likelihood ratio test (BLRT) was significant, which indicates that models with k

profiles fit significantly better than models with k - 1 profiles. Entropy values ranged from 0.650 to 0.685, which indicates acceptable classification accuracy across solutions. The smallest profile proportion remained above 6 % even in the five-profile solution (nmin = 0.064). These patterns are visualised in Figure 1, which plots the BIC values for the one- to five-profile solutions and shows a very large decrease from the one- to the two-profile model, only a small additional improvement from two to three profiles, a clear additional decrease for the four-profile model, and a slight increase for the five-profile model.

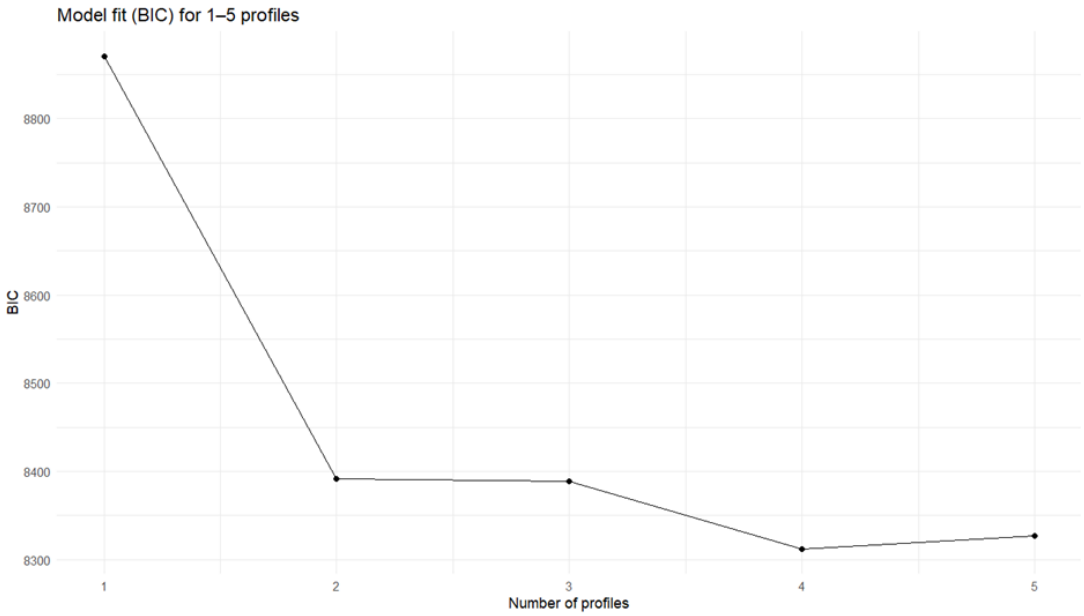

Figure 1

Bayesian Information Criterion (BIC) Across Latent Profile Solutions (1–5 Profiles)

Note. The figure displays the Bayesian information criterion (BIC) for latent profile models with one to five profiles estimated on the main indicator set (describing, acting with awareness, nonjudging, nonreactivity and resilience).

The robustness of the three-profile solution was evaluated by repeating the LPA with observing instead of describing as an indicator. As shown in Table A1 in the Appendix, the pattern of fit indices and the relative preference for more complex models based on BIC were very similar to the main analysis. AIC and SABIC again decreased with additional profiles, and BIC indicated a slight preference for the four and five profile solutions relative to the three-profile model (BIC = 8466.39 for three profiles, 8415.00 for four profiles and 8375.00 for five profiles). BLRT

remained significant at each step and entropy values were in a very similar range (0.645 to 0.716). This convergence across different indicator sets suggests that the basic profile structure was relatively stable across models including or excluding the observing facet.

Although BIC reached its minimum for the four-profile solution (and was also lower for the five- than for the three-profile model), the three-profile model was retained for subsequent analyses on the basis of combined statistical and theoretical considerations. Statistically, the more complex solutions showed some improvement in fit, but this improvement was not uniform across indices, and AIC and SABIC continued to decrease monotonically, which limited their usefulness for identifying a clear stopping point. In addition, BLRT remained significant across successive solutions, as is often observed in mixture models, and therefore did not by itself provide a decisive basis for model selection. Inspection of the four- and five-profile solutions suggested that the additional classes did not provide sufficiently distinct or theoretically meaningful configurations to justify the added complexity. Instead, they appeared to further divide already adaptive profiles into subgroups that were difficult to differentiate theoretically and offered limited added interpretive value. By contrast, the three-profile model showed acceptable entropy (0.650), adequate class sizes, conceptual clarity, and a readily interpretable pattern of indicator scores. The same general three-profile structure was also evident in the alternative model including observing, further supporting the robustness and parsimony of this solution. Taken together, these considerations suggested that the three-profile model offered the most balanced and theoretically meaningful representation of the data. The fit indices for the selected three profile model are summarised in Table 1.

Table 1

Fit indices for latent profile models with 1 to 5 profiles

Classes	LogLik	AIC	AWE	BIC	CAIC	CLC	KIC	SABIC	ICL	Entropy	$prob_{min}$	$prob_{max}$	n_{min}	n_{max}	$BLRT_{val}$	$BLRT_p$
1	-4403.0	8827.0	8963.0	8871.0	8881.0	8809.0	8840.0	8839.0	-8871.0	1.000	1.000	1.000	1.000	1.000	-	-
2	-4145.0	8321.0	8541.0	8392.0	8408.0	8291.0	8340.0	8341.0	-8514.0	0.722	0.903	0.930	0.465	0.535	518.0	0.0099
3	-4124.0	8291.0	8595.0	8388.7	8410.7	8249.0	8316.0	8319.0	-8639.0	0.650	0.689	0.950	0.221	0.551	41.9	0.0099
4	-4066.0	8188.0	8575.0	8312.0	8340.0	8133.0	8219.0	8223.0	-8581.0	0.682	0.733	0.866	0.180	0.438	115.0	0.0099
5	-4054.0	8176.0	8646.0	8327.0	8361.0	8110.0	8213.0	8219.0	-8634.0	0.685	0.625	0.851	0.064	0.411	23.8	0.0099

Note. LogLik = model log-likelihood; AIC = Akaike information criterion; AWE = approximate weight of evidence criterion; BIC = Bayesian information criterion; CAIC = consistent Akaike information criterion; CLC = classification likelihood; KIC = Kullback information criterion; SABIC = sample-size adjusted BIC; ICL = integrated complete-data likelihood (balances fit and classification quality; Entropy = overall classification accuracy; $prob_{min}$ = smallest average posterior class-membership probability; $prob_{max}$ = largest average posterior class-membership probability; n_{min} = size of the smallest latent class; n_{max} = size of the largest latent class; $BLRT_{val}$ = bootstrapped likelihood ratio test statistic comparing k-class and k−1-class models; $BLRT_p$ = p value for the BLRT.

Description of latent profiles

Means and standard deviations of the z standardised indicators for the three latent profiles are presented in Table 3. Figure 1 complements these statistics by displaying boxplots of the z-standardised mindfulness facets and resilience for each latent profile in the main indicator set based on describing. Additional visualisations for the alternative indicator set including observing are provided in Appendix Figure A1, which shows a very similar three-profile configuration when observing is used instead of describing. High-resource profile was characterised by consistently elevated scores on all mindfulness facets and resilience. Participants in this profile had moderately higher levels of describing (M = 0.660, *SD*= 0.782) and acting with awareness (*M*= 0.660, *SD*= 0.774), as well as moderately elevated nonjudging (*M*= 0.401, *SD*= 0.822). The highest deviations from the sample mean were observed for nonreactivity (*M*= 1.080, *SD*= 0.738) and resilience (*M*= 1.150, *SD*= 0.620). This pattern is consistent with a profile characterised by broadly elevated mindfulness skills and particularly strong nonreactivity and resilience. For brevity, this group is referred to as the high mindfulness and resilience profile or high-resource profile.

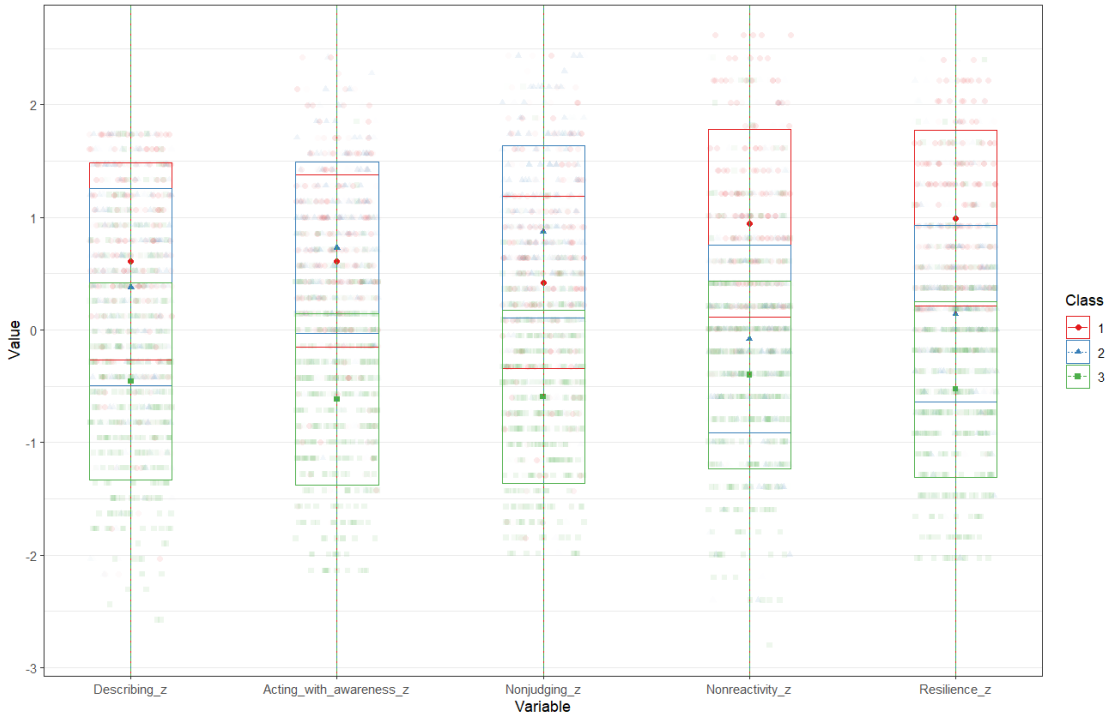

Figure 2.

Boxplots of z standardised mindfulness facets and resilience by latent profile

Note. The figure shows boxplots of z standardised scores on describing, acting with awareness, nonjudging of inner experience, nonreactivity to inner experience and resilience for the three latent profiles in the main indicator set. Overlaid points represent individual participants, coloured by most likely class membership (Class 1, Class 2 and Class 3). Higher scores indicate higher levels of the corresponding facet or resilience.

Moderate-resource profile showed a different configuration of indicators. Acting with awareness (*M*= 0.817, *SD*= 0.642) and nonjudging (*M*= 1.070, *SD*= 0.641) were clearly above the sample mean, and describing was also elevated (*M*= 0.412, *SD*= 0.829). In contrast, nonreactivity was slightly below zero (*M*= -0.169, *SD*= 0.669), and resilience was close to the sample mean (*M*= 0.084, *SD*= 0.592). Moderate-resource profile therefore appears to represent participants who are highly aware and nonjudgmental in relation to their internal experiences, and who tend to describe them in a reflective manner, but who do not differ strongly from the rest of the sample in terms of nonreactivity and resilience. This pattern is best described as a cognitively mindful profile with average resilience or moderate-resource profile.

Low-resource profile was marked by uniformly reduced scores on all indicators. All means were below zero, with describing (*M*= -0.439, *SD*= 0.921), acting with awareness (*M*= -0.601, *SD*= 0.771), nonjudging (*M*= -0.595, *SD*= 0.703), nonreactivity (*M*= -0.380, *SD*= 0.881) and resilience (*M*= -0.510, *SD*= 0.842). This is consistent with a general pattern of low mindfulness skills together with diminished resilience. Given this configuration, Low-resource profile is referred to as the low mindfulness and resilience profile or low-resource profile.

Table 3
Means and standard deviations of z-standardised mindfulness facets and resilience by latent profile

Profile	Describing *M*(SD)	Acting with awareness *M*(SD)	Nonjudging *M*(SD)	Nonreactivity *M*(SD)	Resilience *M*(SD)
High-resource profile	0.660 (0.782)	0.660 (0.774)	0.401 (0.822)	1.080 (0.738)	1.150 (0.620)
Moderate-resource profile	0.412 (0.829)	0.817 (0.642)	1.070 (0.641)	-0.169 (0.669)	0.084 (0.592)
Low-resource profile	-0.439 (0.921)	-0.601 (0.771)	-0.595 (0.703)	-0.380 (0.881)	-0.510 (0.842)

Note. Values are means and standard deviations of z-standardised mindfulness facets and resilience scores. Positive values indicate above-average levels relative to the total sample, whereas negative values indicate below-average levels.

Inspection of the distal outcomes further supports this labelling. As shown in Table 4, Profiles 1 and 2 had higher mean levels of mental health and life satisfaction relative to the sample average, while Low-resource profile had clearly lower scores on both outcomes. For mental

health, the means were positive in the first two profiles (High-resource profile: *M*= 0.491, *SD*= 0.919; Moderate-resource profile: *M*= 0.357, *SD*= 0.838) and negative in the low resource profile (Low-resource profile: *M*= -0.347, *SD*= 0.957). A similar pattern was observed for life satisfaction (High-resource profile: *M*= 0.430, *SD*= 0.745; Moderate-resource profile: *M*= 0.507, *SD*= 0.717; Low-resource profile: *M*= -0.381, *SD*= 1.030).

Table 4
Means and standard deviations of z-standardised mental health and life satisfaction by latent profile

Profile	Mental health *M*(SD)	Life satisfaction *M*(SD)
High-resource profile	0.491 (0.919)	0.430 (0.745)
Moderate-resource profile	0.357 (0.838)	0.507 (0.717)
Low-resource profile	-0.347 (0.957)	-0.381 (1.030)

Note. Mental health and life satisfaction were z-standardised prior to analysis. Positive values indicate scores above the sample mean, whereas negative values indicate scores below the sample mean.

Classification quality was evaluated through average posterior probabilities for most likely profile membership (Table 5). For each profile, the mean posterior probability of belonging to that same profile was relatively high, whereas mean probabilities of belonging to other profiles were low. More specifically, mean posterior probabilities were 0.790 for High-resource profile, 0.745 for Moderate-resource profile and 0.896 for Low-resource profile. Cross profile probabilities ranged from 0.037 to 0.175. This pattern indicates adequate separation of the latent classes and supports the reliability of the three-profile solution.

Table 5
Average posterior classification probabilities by latent profile

Profile	High-resource profile M	Moderate-resource profile M	Low-resource profile M
High-resource profile	0.790	0.173	0.037
Moderate-resource profile	0.175	0.745	0.080
Low-resource profile	0.041	0.063	0.896

Note. Values represent average posterior probabilities of belonging to each latent profile based on most likely class membership. Higher values on the diagonal indicate better classification accuracy, whereas lower off-diagonal values indicate less ambiguity between profiles

.

Differences in mental health and life satisfaction between profiles

To examine differences in distal outcomes between the latent profiles, mental health and life satisfaction (both z standardised) were regressed on dummy coded profile membership, using High-resource profile as the reference category. Linear models were estimated with HC3 robust standard errors. The regression results are shown in Tables 6 and 7, and the estimated marginal means and pairwise comparisons are summarised below.

For mental health (Table 6), the overall model indicated significant differences between profiles. The intercept reflects the mean of High-resource profile (b = 0.491, SE = 0.077, t = 6.35, p< .001). Compared with High-resource profile, Moderate-resource profile did not differ significantly in mental health (b = -0.134, SE = 0.106, t = -1.27, p= .204). In contrast, Low-resource profile showed substantially lower mental health relative to High-resource profile (b = -0.838, SE = 0.093, t = -9.00, p< .001). Estimated marginal means derived from the model indicate that participants in High-resource profile had a mean mental health score of 0.491 (SE = 0.078, 95 % CI [0.339, 0.643]), those in Moderate-resource profile had a mean of 0.357 (SE = 0.079, 95 % CI [0.202, 0.512]) and those in Low-resource profile had a mean of -0.347 (SE = 0.050, 95 % CI [-0.445, -0.249]). Tukey adjusted pairwise comparisons confirmed that both High-resource profile and Moderate-resource profile had significantly better mental health than Low-resource profile (High-resource profile minus Low-resource profile: estimate = 0.838, SE = 0.092, t = 9.09, p< .001; Moderate-resource profile minus Low-resource profile: estimate = 0.704, SE = 0.093, t = 7.53, p< .001), while the difference between High-resource profile and Moderate-resource profile was not statistically significant (p= .445).

An analogous pattern emerged for life satisfaction (Table 7). The intercept again represents the mean of High-resource profile (b = 0.430, SE = 0.063, t = 6.85, p< .001). The coefficient for Moderate-resource profile relative to High-resource profile was small and non significant (b = 0.077, SE = 0.088, t = 0.87, p= .385), whereas Low-resource profile had markedly lower life satisfaction compared with High-resource profile (b = -0.811, SE = 0.084, t = -9.67, p< .001). Estimated marginal means indicated that life satisfaction was positive in both higher resource profiles (High-resource profile: M= 0.430, SE = 0.076, 95 % CI [0.280, 0.579]; Moderate-resource profile: M= 0.507, SE = 0.078, 95 % CI [0.354, 0.659]) and negative in the low resource profile (Low-resource profile: M= -0.381, SE = 0.049, 95 % CI [-0.478, -0.285]). Tukey adjusted comparisons showed that both High-resource profile and Moderate-resource profile

differed significantly from Low-resource profile in the expected direction (High-resource profile minus Low-resource profile: estimate = 0.811, SE = 0.091, t = 8.96, *p*< .001; Moderate-resource profile minus Low-resource profile: estimate = 0.888, SE = 0.092, t = 9.68, *p*< .001), while the small difference between High-resource profile and Moderate-resource profile was not significant (*p*= .759).

Taken together, these results indicate that profiles characterised by higher mindfulness and resilience show better mental health and higher life satisfaction compared with the low mindfulness and resilience profile. However, within the group of higher resource profiles, the two patterns (high mindfulness and resilience versus cognitively mindful with average resilience) did not differ significantly in terms of these outcomes.

Table 6
Regression of z-standardised mental health on latent profiles (High-resource profile as reference, HC3 robust SE)

Predictor	b	SE	t	p
Intercept (High-resource profile)	0.491	0.077	6.35	< .001
Moderate-resource profile vs High-resource profile	-0.134	0.106	-1.27	.204
Low-resource profile vs High-resource profile	-0.838	0.093	-9.00	< .001

Note. Mental health and life satisfaction were z-standardised prior to analysis. Latent profiles were entered as dummy-coded predictors, with High-resource profile as the reference category. The intercept therefore represents the mean of the High-resource profile. Regression coefficients (b) indicate the difference between each comparison profile and the reference profile. SE = robust standard error (HC3)

Table 7
Regression of z-standardised life satisfaction on latent profiles (High-resource profile as reference, HC3 robust SE)

Predictor	b	SE	t	p
Intercept (High-resource profile)	0.430	0.063	6.85	< .001
Moderate-resource profile vs High-resource profile	0.077	0.088	0.87	.385
Low-resource profile vs High-resource profile	-0.811	0.084	-9.67	< .001

Note. Life satisfaction was z-standardised prior to analysis. Latent profiles were entered as dummy-coded predictors, with High-resource profile as the reference category. The intercept therefore represents the mean of the High-resource profile. Regression coefficients (b) indicate the difference between each comparison profile and the reference profile. SE = robust standard error (HC3)

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Antecedents of profile membership

To examine whether experiences of violence, socioeconomic status and relational resources predict membership in the latent profiles, a multinomial logistic regression was estimated with Low-resource profile as the reference category. Predictors were z standardised frequency of violence exposure, SES, family relationship quality, age, dichotomous romantic relationship status and gender, treated as a factor. Odds ratios (OR), confidence intervals and p values are presented in Table 8.

For High-resource profile compared with Low-resource profile, frequency of violence exposure and SES were not significant predictors (OR = 0.995, p= .962 and OR = 1.030, p= .806, respectively). In contrast, more positive family relationships were strongly associated with a higher likelihood of belonging to High-resource profile rather than Low-resource profile (OR = 1.630, 95 % CI [1.280, 2.060], p< .001). Age was also a significant predictor (OR = 1.240, 95 % CI [1.010, 1.520], p= .041), indicating that older students were somewhat more likely to be classified into the high mindfulness and resilience profile than into the low resource profile. Finally, sex showed a significant effect (OR = 0.430, 95 % CI [0.243, 0.762], p= .004), which suggests that women had lower odds of membership in High-resource profile relative to the reference sex (men) in the Low-resource group. Romantic relationship status did not significantly differentiate High-resource profile from Low-resource profile (OR = 1.100, p= .667).

For Moderate-resource profile compared with Low-resource profile, a partially different pattern emerged. Higher levels of cumulative violence were associated with a lower likelihood of belonging to Moderate-resource profile rather than Low-resource profile (OR = 0.782, 95 % CI [0.625, 0.977], p= .030), indicating that more frequent or repeated exposure to violence increased the relative probability of being in the low resource profile.

As in the comparison with High-resource profile, more positive family relationships were linked to a higher likelihood of membership in Moderate-resource profile (OR = 1.480, 95 % CI [1.160, 1.880], p= .001). In addition, being in a romantic relationship significantly predicted membership in the cognitively mindful profile with average resilience rather than the low resource profile (OR = 1.870, 95 % CI [1.200, 2.890], p= .005). SES and sex were not significant predictors for this contrast (both p> .200), and age was only a marginal predictor (OR = 1.210, 95 % CI [0.982, 1.500], p= .073).

Overall, these findings suggest that positive family relationships and, to some extent, romantic relationship involvement are important correlates of belonging to higher resource profiles, while cumulative violence differentiates the cognitively mindful profile from the low resource group. SES did not show the expected protective effect on profile membership in this sample.

Table 8
Multinomial logistic regression predicting profile membership from violence exposure, SES, family relationships, relationship status, age and sex (odds ratios, reference = Low-resource profile)

Outcome profile vs Low-resource profile	Predictor	OR	95% CI [low, high]	SE	z	p
High-resource profile	(Intercept)	0.801	0.474, 1.350	0.267	-0.830	.406
	Experienced violence	0.995	0.804, 1.230	0.109	-0.048	.962
	SES	1.030	0.832, 1.270	0.108	0.245	.806
	Family relationship	1.630	1.280, 2.060	0.121	4.030	< .001
	Intimate partner reationship	1.100	0.720, 1.670	0.215	0.431	.667
	Age	1.240	1.010, 1.520	0.105	2.050	.041
	Gender	0.430	0.243, 0.762	0.292	-2.890	.004
Moderate-resource profile	(Intercept)	0.164	0.071, 0.378	0.427	-4.240	< .001
	Experienced violence	0.782	0.625, 0.977	0.114	-2.170	.030
	SES	0.992	0.797, 1.240	0.112	-0.070	.944
	Family relationship	1.480	1.160, 1.880	0.122	3.210	.001
	Intimate partner reationship	1.870	1.200, 2.890	0.224	2.790	.005
	Age	1.210	0.982, 1.500	0.108	1.790	.073
	Gender	1.720	0.731, 4.050	0.437	1.240	.214

Note. Multinomial logistic regression was estimated with Low-resource profile as the reference category. Odds ratios (OR) greater than 1 indicate a higher likelihood of membership in the comparison profile relative to the Low-resource profile, whereas values below 1 indicate a lower likelihood. CI = confidence interval; SE = standard error. Gender and intimate partner relationship were treated as categorical variables. SES, family relationship, experienced violence, and age were entered as predictors as coded in the study.

Discussion

The aim of this study was to identify latent configurations of mindfulness facets and psychological resilience among university students, examine how these configurations relate to mental health and life satisfaction, and explore the role of exposure to violence and contextual protective factors in predicting profile membership. Latent profile analysis yielded three psychologically and theoretically coherent profiles: a high-resource profile, a moderate-resource (cognitively mindful) profile, and a low-resource profile.

These findings support contemporary conceptualizations of mindfulness and resilience as key personal resources for psychological adjustment and well-being and illustrate the added value of person-centered approaches (Morin et al., 2018). In line with H1, the profiles reflected systematic differences in attentional, emotional, and behavioral self-regulation. The high-resource profile, characterized by elevated scores on all mindfulness facets and high resilience, is consistent with definitions of mindfulness as an open, nonjudgmental orientation to present-moment experience (Baer et al., 2006) and of resilience as the capacity to recover and maintain equilibrium under stress (Smith et al., 2008). It also aligns with the Broaden-and-Build Theory, which posits that positive emotions, facilitated by greater awareness and acceptance, broaden thought-action repertoires and accumulate durable psychological resources such as flexible coping and resilience (Fredrickson, 2001, 2013).

The moderate-resource profile showed particularly pronounced cognitive-reflective aspects of mindfulness (describing, acting with awareness, nonjudging) alongside average resilience, resembling profiles identified in earlier LPA work where heightened cognitive mindfulness was linked to relatively adaptive emotional functioning (Bravo et al., 2016; 2018; Bodenlos et al., 2013; Pearson et al., 2021). This is consistent with models emphasizing that conscious attention to internal states and a nonjudgmental stance can independently promote well-being by reducing reactivity and increasing emotional clarity (Lindsay & Creswell, 2017). In contrast, the low-resource profile, marked by lower scores on all mindfulness facets and resilience, reflects limited attentional engagement and weaker recovery from stress, echoing evidence that reduced protective resources are associated with greater emotional difficulties and less effective coping (Janousch et al., 2022).

The findings should therefore not be interpreted as suggesting that mindfulness and resilience are interchangeable constructs, but rather that they represent related yet distinct resources that

may combine in different ways across individuals. The findings also supported H2. Across profiles, high- and moderate-resource groups showed better mental health and greater life satisfaction than the low-resource group, in line with variable-centered and meta-analytic findings that higher dispositional mindfulness is associated with lower depression and anxiety and higher subjective well-being, partly via improved emotion regulation and reduced rumination (Crego et al., 2021; Wu et al., 2025).

Similarly, meta-analytic and empirical findings confirm resilience as a robust protective factor that attenuates depressive and anxious symptoms and supports better well-being across age groups and populations, including adolescents and students (Dalmış et al., 2025; Górska et al., 2022; Jeamjitvibool et al., 2022; Zhu et al., 2025). These patterns are compatible with dual-continuum models of mental health, which conceptualize psychopathology and well-being as related yet distinct dimensions; mindfulness and resilience tend to characterize profiles combining low distress with high well-being, whereas lower resources are linked to configurations marked by elevated distress and reduced positive functioning (Kennedy et al., 2024).

An important nuance is that high-resource and moderate-resource profiles did not differ significantly in mental health or life satisfaction. Although the high-resource profile showed particularly high nonreactivity and resilience, the cognitively mindful moderate-resource profile achieved comparable levels of adjustment. This suggests that certain combinations of cognitive and metacognitive skills (e.g., acting with awareness, nonjudging, and describing experiences) may be associated with sufficiently adaptive functioning, even when resilience is not at its maximum. Longitudinal studies show that mindfulness is linked to greater life satisfaction and lower depression via resources such as resilience, self-esteem, and subjective well-being (Dalmış et al., 2025; Wang & Kong, 2020), while the Dual Pathways Mindfulness Model highlights self-compassion and reduced rumination as key routes toward higher life satisfaction and lower depressive symptoms (Wu et al., 2025).

Consistent with this, resilience and self-compassion have been identified as central mediators between mindfulness and mental health in community adults and youth, with high resilience further reducing the risk of distress but not representing the sole pathway to favourable outcomes (Chuang et al., 2024; Zhu et al., 2025). These findings support the idea that different constellations of personal resources can yield functionally similar outcomes, provided that a critical mass of self-regulatory capacities is present.

The results further supported H3, particularly regarding the role of violence exposure and relational protective factors. At the contextual level, exposure to violence robustly predicted membership in the low-resource profile. This is consistent with evidence that chronic or repeated violence disrupts emotion regulation, selective attention, and neurobiological systems involved in stress response (Heleniak et al., 2016; McLaughlin et al., 2020). Neuroscientific syntheses show that experiences of threat and abuse alter the development of fronto-limbic networks implicated in threat detection and cognitive control, thereby hindering flexible emotion regulation and elevating general psychopathological vulnerability (Jenness et al., 2021; McLaughlin et al., 2019; Samson et al., 2024). Transdiagnostic research further indicates that emotion regulation difficulties mediate the link between childhood maltreatment and a broad spectrum of psychological problems (Weissman et al., 2019).

In line with theories of stress-trauma psychobiology and Conservation of Resources models, such experiences likely erode mindfulness capacities and resilience, fostering patterns of vulnerability. Recent student data suggest that lower mindfulness is one mechanism through which adverse childhood experiences undermine resilience and that mindfulness partially attenuates the effects of ACEs on resilience (Sezgin, 2025). Conversely, positive family relationships and stable romantic partnerships increased the likelihood of belonging to high- and moderate-resource profiles. Family support promotes emotional security, models adaptive regulation strategies, and provides a key context for building psychological resources (Boylan et al., 2018; Fergus & Zimmerman, 2005; Morris et al., 2007; Ozbay et al., 2008), while broader social support has been repeatedly linked to greater resilience to stress and better mental health across the lifespan (Ozbay et al., 2008). Intervention studies show that programs targeting mindful parenting and family communication improve family functioning and reduce psychological difficulties in the context of social crises and violence (Lo et al., 2022). Romantic relationships also appear to be important relational resources: meta-analytic and review evidence indicates that supportive, trusting partnerships with constructive conflict resolution are associated with higher well-being, whereas conflictual or violent relationships are linked to poorer mental health (Gómez-López et al., 2019; Mirsu-Paun & Oliver, 2017; Proulx et al., 2007).

From a Conservation of Resources perspective, such close relationships can be understood as “resource caravans” that help accumulate and maintain personal capacities (Hobfoll, 1989, 2001), while chronic social isolation constitutes a substantial health risk (Umberson & Donnelly,

2023). However, H3 was only partially supported with respect to socioeconomic status. Socioeconomic status was not a significant predictor, which may reflect limited SES variability in a student sample and is consistent with evidence that SES effects on mental health often operate indirectly through family processes, health behaviors, and psychological resources such as control, optimism, and social support (Boylan et al., 2018; Diener et al., 1999; Rakesh et al., 2025). Methodologically, the findings also supported H4. The three-profile solution proved robust when the describing facet was replaced by observing, even though observing sometimes correlates positively with distress in non-meditating samples (Aguado et al., 2015; Asensio-Martínez et al., 2019; Van Dam et al., 2009). At the same time, there is evidence that differential item functioning on the FFMQ between meditators and nonmeditators is minimal when groups are demographically matched (Baer et al., 2011), which supports the general comparability of mindfulness scores across these populations. This replication across alternative indicator sets aligns with recommendations to conduct sensitivity analyses to test the stability of latent profiles (Masyn, 2013) and supports the interpretation that the identified profiles represent substantive psychological heterogeneity rather than artifacts of measurement choices.

Overall, the findings suggest that mindfulness and resilience function as interconnected personal resources associated with mental health and life satisfaction, and that these associations appear to be embedded within relational and contextual environments. The person-centered approach used here complements traditional variable-centered designs by revealing qualitatively distinct configurations of resources that carry different levels of risk and protection (Morin et al., 2018; Roberts et al., 2023).

Practically, the findings tentatively suggest that students in the low-resource profile may benefit from interventions aimed at cultivating mindfulness skills, strengthening emotion regulation, and enhancing resilience, alongside efforts to reduce exposure to violence and support safer, more nurturing family and romantic relationships. High- and moderate-resource profiles, although not identical in their internal structure, appear to share a sufficient constellation of self-regulatory and contextual resources to sustain similarly favorable levels of mental health and well-being.

Limitations and future research suggestions

The present findings should be interpreted in light of several methodological limitations, but they also offer meaningful implications and directions for further research. First, the cross-sectional, self-report design precludes causal conclusions about the relations between mindfulness–resilience profiles, mental health, and life satisfaction, in line with broader concerns about the

predominance of correlational work in the mindfulness literature (Carpenter et al., 2019; Tomlinson et al., 2018).

Second, the non-probability online sample of Croatian emerging adults, with a strong overrepresentation of women, limits generalisability to men, non-students, and other cultural contexts, especially given evidence that mindfulness profiles and their prevalence can differ across populations (Gu et al., 2020; Lecuona et al., 2022; Mehrabi & Beshai, 2025). The sample is highly skewed toward female participants, as noted above, which further substantially limits the generalisability of the findings.

Third, several key constructs (violence exposure, family relationships, SES, relationship status, life satisfaction) were assessed with single items. Although single-item life satisfaction indicators can be valid when benchmarked against multi-item scales (Cheung & Lucas, 2014) and single-item measures may be justified under certain conditions (Allen et al., 2022), this approach likely increased measurement error and reduced the precision of estimates for complex constructs such as violence and family functioning. This limitation is particularly relevant for contextual predictors, as single-item indicators are less able to capture the breadth, nuance, and potential multidimensionality of experiences such as violence exposure, socioeconomic position, and relationship quality. There are also limitations specific to the latent profile analysis.

The three-profile solution represented a balance between fit and interpretability, yet information criteria indicated that more complex models were statistically competitive, consistent with simulation work showing that class enumeration is sensitive to model specification and that no single index is definitive (Masyn, 2013; Nylund et al., 2007; Nylund-Gibson & Choi, 2018). Profiles were estimated with constrained variances and zero covariances, entropy indicated moderate classification accuracy, and distal outcomes and predictors were related to most-likely profiles rather than being analysed using procedures that explicitly account for classification uncertainty. Accordingly, the associations with distal outcomes and antecedents should be interpreted with some caution, because some degree of bias may have been introduced by treating profile membership as observed rather than probabilistic. More rigorous approaches, such as three-step procedures or BCH-type methods, would provide stronger protection against misclassification bias in future analyse (Nylund-Gibson & Choi, 2018; Van Lissa et al., 2024). In addition, ongoing debates about the factor structure of the FFMQ and evidence that the patterning of mindfulness facets and their links with adjustment can differ across instruments

and samples (Carpenter et al., 2019; Gu et al., 2020; Lecuona et al., 2022; Mehrabi & Beshai, 2025) were only partially addressed, as alternative measurement models and invariance across subgroups were not tested.

Despite these caveats, the identification of high-resource, cognitively mindful, and low-resource profiles is consistent with person-centred studies showing that mindfulness is not a monolithic trait and that certain facet constellations are more strongly linked to psychological adjustment (Bravo et al., 2016; Gu et al., 2020; Lecuona et al., 2022; Mehrabi & Beshai, 2025). The better mental health and life satisfaction observed in the higher-resource profiles align with meta-analytic evidence on the beneficial associations of trait mindfulness (Carpenter et al., 2019; Tomlinson et al., 2018).

Future longitudinal and intervention studies should therefore examine the stability of these profiles, profile transitions, and profile-specific intervention effects (Bravo et al., 2016; Gu et al., 2020; Lecuona et al., 2022; Mehrabi & Beshai, 2025), while also improving measurement of contextual factors and adopting best-practice LPA procedures, including more flexible model specifications and robust three-step methods (Allen et al., 2022; Cheung & Lucas, 2014; Masyn, 2013; Nylund et al., 2007; Nylund-Gibson & Choi, 2018; Van Lissa et al., 2024).

Conclusion

Overall, the present findings provide substantial support for the proposed person-centred framework linking configurations of mindfulness facets and resilience with indicators of psychological adjustment and contextual risk and protective factors. In line with H1, latent profile analysis based on acting with awareness, nonjudging, nonreactivity, describing and resilience yielded a theoretically coherent three-profile solution that corresponded to high, moderate and low resource configurations. One profile was characterised by generally elevated levels across all mindfulness facets and particularly high resilience (High-resource profile), a second profile combined high mindfulness with only mildly elevated resilience (Moderate-resource profile), whereas a third profile showed consistently lower scores on both mindfulness and resilience (Low-resource profile). Although alternative specifications with a larger number of profiles achieved slightly better fit on some information criteria, the three-profile solution offered an optimal balance between statistical adequacy, parsimony and theoretical interpretability (Nylund et al., 2007), and was supported by satisfactory entropy and high mean posterior classification probabilities for each class.

Consistent with H2, both higher-resource profiles exhibited significantly better psychological outcomes than the Low-Resource profile. Namely, participants in the High-resource and Moderate-resource groups reported higher mental health and greater life satisfaction, and these two profiles did not differ significantly from one another on either outcome. This pattern underscores that configurations marked by greater mindful awareness, nonjudgment and nonreactivity, coupled with higher resilience, operate as a robust protective pattern linked to enhanced subjective well-being. Evidence for H3 was more nuanced and points to a differentiated role of adversity and contextual resources in shaping profile membership. As expected, more positive family relationships and being in a stable romantic relationship increased the likelihood of belonging to higher-resource profiles compared to the Low-Resource profile, highlighting the importance of supportive interpersonal contexts for the development or maintenance of mindfulness-resilience configurations. Experiences of violence were associated with a reduced likelihood of belonging to the Mindful-Moderate Resource profile relative to the Low-Resource profile, indicating that greater exposure to violence is linked to a higher probability of membership in low-resource configurations, although this association did not extend clearly to the High-Resource profile. Socioeconomic status, however, did not significantly distinguish between profiles, suggesting that subjective family climate and close relationship status may be more proximal correlates of mindfulness-resilience profiles in this sample than SES per se. Additional covariate effects (age and sex) further suggested that older participants and men were more likely to be found in the High-Resource profile relative to the Low-Resource group, but these were not central to the original hypotheses. Finally, H4 received support insofar as an alternative model that replaced describing with observing yielded a very similar three-profile structure, with comparable fit indices and a parallel differentiation between high, moderate and low resource configurations. Taken together, these results suggest that specific combinations of mindfulness facets and resilience cohere into distinct and relatively robust profiles that are differentially associated with mental health and life satisfaction, and that profile membership is linked to supportive relational contexts and exposure to interpersonal violence. These conclusions should, however, be interpreted cautiously given the cross-sectional design, reliance on self-report data, and several methodological constraints.

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About the Authors

Krešimir Prijatelj is a a psychologist who completed his doctoral studies in Psychology at the University of Zagreb, Faculty of Humanities and Social Sciences, in 2026. He holds a Master's degree in Psychology (University of Zagreb, 2018) and has completed advanced training in Gestalt psychotherapy (2019–2023, under supervision, IGW Centre Zagreb). Since 2023, he has been training as a sexual therapist under supervision with the Croatian Association for Sexual Therapy. He works as a counsellor and research assistant at the University of Zadar, with prior clinical experience at the Child and Youth Protection Center of Zagreb. His expertise combines clinical work, research, and teaching, focusing on trauma, sexuality, and mental health among children, adolescents, and young adults

Đana Ravlić, bacc. psych., is currently completing her graduate studies in psychology at the Department of Psychology, University of Zadar. In her bachelor's thesis, she focused on childhood trauma, and she is now writing her master's thesis on the relationship between childhood trauma and dark triad personality traits. Her academic interests broadly centre on the long-term psychological consequences of adverse childhood experiences and personality functioning.

Corresponding Author's Contact Address

Krešimir Prijatelj

Department of Psychology, University of Zadar,

Šime Vitasovića 1, 23000

Zadar

Croatia

E-mail: kresimir.prijatelj@gmail.com