

Resilience and Affective Well-Being in Digital Environments

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This study examines the relationship between resilience as a multidimensional resource for adaptive coping and emotional regulation and affective well-being in online learning environments. The sample included 375 participants engaged in online learning activities (age range 18–48 years; $M = 21.42$, $SD = 3.93$). Resilience was assessed using the Connor–Davidson Resilience Scale (Connor & Davidson 2003), while affective well-being was measured through a linguistically adapted Bulgarian version of the IWP Multi-Affect Indicator (Warr 2016). Factor analysis supported the multidimensional structure of both instruments. In the Bulgarian adaptation, anxiety and depressive affect converged into a broader Emotional Distress dimension alongside Enthusiastic Affect and Calm Emotional States. Regression analyses demonstrated that resilience dimensions were differentially associated with emotional functioning. Adaptive coping capacity emerged as the strongest predictor across emotional outcomes, highlighting the role of emotional flexibility and self-regulation in online adaptation. Goal-directedness was positively associated with enthusiastic affect, whereas social support demonstrated protective associations with emotional distress. External reliance was positively related to emotional distress and negatively associated with calm emotional states. The findings support multidimensional approaches to affective well-being and underline the practical relevance of resilience-focused interventions in online educational and occupational settings.

Keywords: resilience; affective well-being; digitally mediated environments; online learning; emotional distress.

Introduction

The transition toward online learning has changed not only how educational activities are organized, but also the psychological conditions under which students are expected to function. Digitally mediated learning often requires sustained attention, greater self-regulation, and prolonged cognitive engagement, while reducing some of the immediate social and emotional feedback available in face-to-face settings. As academic activities increasingly enter the personal space of everyday life, maintaining motivation, emotional balance, and psychological engagement may become particularly challenging. Research conducted in online learning contexts has associated these conditions with emotional strain, anxiety, reduced social connectedness, and difficulties sustaining academic engagement (Akese et al. 2024, Nuñez et al. 2022).

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These challenges have increased interest in resilience as a possible resource for psychological adaptation. At the same time, resilience remains a complex and debated construct. It has been conceptualized in different ways across the literature — as an individual capacity or resource, a pattern of successful adaptation, a dynamic process, and an outcome emerging from the interaction between individuals and their environments (Fletcher & Sarkar 2013, Masten 2014, Southwick et al. 2014). Connor and Davidson (2003), whose model provides the basis for the resilience measure used in the present study, approach resilience as a multidimensional capacity involving resources such as adaptability, persistence, perceived control, tolerance of negative affect, and supportive relationships. This perspective is particularly relevant to online learning, where students are required to manage changing demands while maintaining both emotional and goal-directed functioning.

Contemporary resilience research, however, cautions against viewing resilience as a fixed personal characteristic or assuming that it operates in the same way across individuals and situations. Bonanno (2004) distinguished resilience from recovery and demonstrated that people may follow substantially different trajectories when adapting to adversity. From a social-ecological perspective, Ungar (2011) similarly argues that successful adaptation cannot be separated from the social, cultural, and environmental resources available to the individual. Masten (2014) extends this view by conceptualizing resilience as the capacity of a dynamic system to adapt successfully to disturbances, shifting attention from isolated personal characteristics toward interactions between multiple systems and levels of functioning. More recently, Kalisch et al. (2017) have advocated a process-oriented approach in which resilience is examined through the mechanisms that support adaptation over time rather than being treated primarily as a stable individual attribute.

There are also important reasons to avoid assuming that resilience is universally protective or inherently desirable. Conceptual and methodological differences in how resilience is defined and measured have produced considerable variation across studies (Fletcher & Sarkar 2013, Southwick et al. 2014). Infurna and Luthar (2018), for example, questioned claims that resilient responses are necessarily commonplace, demonstrating how conclusions about resilience trajectories may depend on the methods used to define and assess adaptation. Hill et al. (2024) further challenge the assumption that returning to a previous level of functioning always represents the most desirable response to adversity, particularly when changing circumstances may require transformation rather than restoration. Taken together, these perspectives suggest that resilience is better understood as a context-dependent and multidimensional phenomenon whose adaptive significance may vary across individuals and environments.

Against this more complex theoretical background, empirical research has nevertheless identified meaningful associations between resilience-related resources and emotional functioning in digital educational and occupational settings. Ge (2025) found that resilience among university students engaged in online learning was associated with emotional engagement, persistence, and self-regulated learning. Similarly, Shi et al. (2025) reported associations between psychological resilience, self-efficacy, digital competence, and adaptive functioning among online teachers. Social and interpersonal resources may also be important. Abbasi et al. (2025), for example, identified relationships between emotional resilience, online social

connectedness, and digital well-being, while Bagdžiūnienė et al. (2023) demonstrated the importance of emotional resilience resources for psychological well-being under sustained professional demands. These findings suggest that the relationship between resilience and psychological functioning may be better understood by examining specific resilience-related resources rather than treating resilience as a single global characteristic.

A similarly differentiated approach is useful when considering affective well-being. Warr's circumplex model proposes that emotional experiences vary simultaneously in valence and activation, allowing distinctions between states such as anxiety, depression, enthusiasm, and comfort (Warr 2016, Warr et al. 2014). This approach moves beyond a simple positive–negative distinction and may be particularly useful in online learning contexts, where students can experience combinations of cognitive activation, emotional strain, enthusiasm, and calmness. Activated positive affect, for example, has been associated with proactive behavior and psychological engagement, whereas lower-activation positive states may reflect different aspects of emotional functioning (Madrid et al. 2014). Research in online educational contexts has similarly highlighted the importance of emotional engagement and well-being for maintaining psychological involvement during digitally mediated learning (Zhang 2025).

Considering resilience and affective well-being as multidimensional constructs may therefore provide a more nuanced account of psychological adaptation in online learning. Rather than assuming that resilience as a whole should be associated with better emotional outcomes, it becomes important to examine whether particular resilience-related resources show different relationships with emotional distress, activated positive affect, and calm emotional states. Such an approach also allows for the possibility that some dimensions traditionally included within resilience measures may have weak, context-dependent, or even unfavorable associations with particular emotional outcomes.

Despite growing interest in resilience and well-being in digital environments, relatively limited attention has been given to the joint examination of their multidimensional structure, particularly in culturally specific educational contexts. In addition, the adaptation of established measures across linguistic and cultural settings may reveal patterns that do not fully reproduce their original theoretical structures. Examining these patterns is important not only from a psychometric perspective, but also for understanding how resilience-related resources and affective experiences are organized and related within particular contexts.

Research Aim and Research Questions

Building on the theoretical considerations outlined above, the present study aims to examine how different dimensions of psychological resilience are related to distinct aspects of affective well-being among students engaged in online learning. Rather than treating resilience and well-being as global constructs, the study adopts a multidimensional perspective, allowing for a more differentiated examination of the

psychological resources associated with emotional functioning in digitally mediated educational environments.

A further aim is to explore the factor structure of the Bulgarian versions of the Connor–Davidson Resilience Scale and the IWP Multi-Affect Indicator and to consider whether the empirically identified dimensions provide a meaningful representation of resilience and affective experience within the present sample.

Accordingly, the study addresses the following research questions:

1. What factor structure of psychological resilience emerges from the Bulgarian adaptation of the Connor–Davidson Resilience Scale in the present sample?
2. What factor structure of affective well-being emerges from the Bulgarian adaptation of the IWP Multi-Affect Indicator?
3. How are the identified dimensions of psychological resilience associated with emotional distress, enthusiastic affect, and calm emotional states in digitally mediated learning environments?
4. Which dimensions of psychological resilience show the strongest associations with each of these distinct aspects of affective well-being?

Method

Data were collected through an online survey administered via the Google Forms platform. Participants were informed that the study aimed to examine psychological resilience and emotional functioning in digitally mediated learning environments. They were also informed that participation was voluntary, anonymous, and that all collected data would be used solely for scientific purposes. Prior to each questionnaire and scale, participants received brief information regarding the purpose of the instrument as well as instructions for completion. At the end of the survey, a demographic section was included assessing participants' socio-demographic characteristics. The collected data were processed and statistically analyzed using IBM SPSS (v. 29).

Participants

The sample included 375 Bulgarian participants engaged in online learning, including both undergraduate and master's students. Participants ranged in age from 18 to 48 years ($M = 21.43$, $SD = 3.93$), and the sample consisted of 140 males (37.3%) and 235 females (62.7%). The relatively broad age range reflects the diversity of students enrolled in higher education, particularly at the master's level, where students of different ages and at different stages of their educational trajectories are commonly represented. Thus, although the sample was heterogeneous in terms of chronological age, all participants shared the same relevant context: they were engaged in higher education during a period of online learning.

Instruments

For the purposes of the present study, a psychological assessment battery including the following questionnaires and scales was administered.

The first instrument was the Connor–Davidson Resilience Scale (CD-RISC, Connor & Davidson 2003), designed to assess psychological resilience as a multidimensional adaptive capacity associated with emotional regulation, persistence, coping flexibility, and functioning under conditions of stress and adversity. The questionnaire is self-report and consists of 25 items.

In the original version, participants evaluate each statement using a five-point Likert scale ranging from “0 – not true at all” to “4 – true nearly all the time.” In the present study, a modified response format was applied using a seven-point agreement scale ranging from “1 – strongly disagree” to “7 – strongly agree.” The original instrument includes five resilience-related dimensions: “Personal Competence, High Standards, and Tenacity,” “Trust in One’s Instincts, Tolerance of Negative Affect, and Strengthening Effects of Stress,” “Positive Acceptance of Change and Secure Relationships,” “Control,” and “Spiritual Influences.”

The second instrument was the IWP Multi-Affect Indicator developed by Warr (2016), designed to assess affective well-being in occupational and educational contexts through emotions differing in valence and activation level. The original version includes 16 affective descriptors representing four emotional domains: Anxiety, Depression, Enthusiasm, and Comfort. During the linguistic adaptation of the questionnaire, two descriptors from the original version (“dejected” and “laid-back”) were excluded due to semantic overlap with other retained emotional states and difficulties identifying conceptually precise Bulgarian equivalents. Several descriptors were additionally refined in order to improve semantic clarity and contextual comprehensibility within the Bulgarian cultural context. As a result, the final adapted version consisted of 15 affective descriptors. In the original version, the emotional states are evaluated using a six-point frequency scale. In the present study, a modified five-point response scale ranging from “1 – never” to “5 – all the time” was applied in order to facilitate clearer differentiation and more consistent responding within the online research context.

Factor Structure of the Connor–Davidson Resilience Scale

The factorial structure of the Bulgarian adaptation of the Connor–Davidson Resilience Scale (CD-RISC, Connor & Davidson 2003) was examined through exploratory factor analysis using Principal Component Analysis with Varimax rotation. The analysis aimed to investigate the latent organization of resilience-related characteristics within the Bulgarian sample and to evaluate the structural adequacy of the adapted instrument. Sampling adequacy indicators demonstrated excellent suitability of the data for factor analysis (Kaiser–Meyer–Olkin measure = .935; Bartlett’s Test of Sphericity: $\chi^2(300) = 4153.95$, $p < .001$). The extracted factors explained 59.75% of the total variance, indicating satisfactory structural coherence and psychometric adequacy of the scale.

The obtained factorial solution revealed a multidimensional structure reflecting several interconnected psychological resources involved in adaptation, emotional

regulation, and coping under stress. Although the original factorial structure proposed by Connor and Davidson was only partially replicated, the extracted dimensions demonstrated clear conceptual interpretability and satisfactory internal consistency. Rather than reproducing the original factor configuration, the Bulgarian adaptation yielded psychologically meaningful clusters of items corresponding to distinct aspects of resilience functioning in digitally mediated contexts. Consequently, revised factor labels were introduced in order to more accurately reflect the semantic content and psychological meaning of the retained item groupings (see Table 1).

Table 1. *Rotated Factor Matrix of the Bulgarian Adaptation of the Connor–Davidson Resilience Scale (CD-RISC, Connor & Davidson 2003)*

Item	Adaptive Coping Capacity	Goal-Directedness	Personal Agency	External Reliance	Social Support
Able to adapt to change	.781				
Can deal with whatever comes	.758				
Coping with stress strengthens me	.742				
Tend to bounce back after hardship	.731				
Under pressure, stay focused	.706				
Think clearly under pressure	.691				
Can handle unpleasant feelings	.648				
Not easily discouraged by failure	.617				
Achieve goals despite obstacles		.817			
Strong sense of purpose		.801			
Work to attain goals		.783			
Give best effort no matter what		.751			
Like challenges		.710			
Past success gives confidence		.694			
Things happen for a reason		.602			
Pride in achievements		.588			
Think of self as strong person			.774		
Feel in control of life			.756		
Make difficult decisions			.691		
Prefer taking the lead			.643		
Sometimes fate or God can help				.779	
Have to act on a hunch				.713	
Trust instincts under stress				.645	
Close and secure relationships					.812
Know where to turn for help					.748
Eigenvalue (after rotation)	5.214	3.882	2.311	1.911	1.620
Explained Variance (%)	20.86	15.52	9.24	7.64	6.48
Cumulative Variance (%)	20.86	36.39	45.63	53.27	59.75
Cronbach's α	.846	.876	.768	.618	.723

Note. Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Only factor loadings above .40 are presented.

The first factor, Adaptive Coping Capacity (8 items; $\alpha = .846$), included statements associated with emotional flexibility, stress tolerance, behavioral adaptation, and the ability to recover under pressure. The factor reflects the capacity to maintain psychological functioning despite emotionally demanding or uncertain situations. Goal-Directedness (8 items; $\alpha = .876$) represented persistence, motivational orientation, and the ability to sustain focus and commitment to personal goals despite obstacles and difficulties. Personal Agency (4 items; $\alpha = .768$) captured perceptions of self-efficacy, decisiveness, confidence in personal capabilities, and perceived influence over challenging situations.

The factor labeled External Reliance (3 items; $\alpha = .618$) included items associated with reliance on intuition, external sources of meaning, faith, or broader beliefs supporting psychological stability under stress. Unlike the original “Spiritual Influences” factor proposed by Connor and Davidson, the obtained structure suggested a broader orientation toward external forms of guidance, meaning-making, and psychological support rather than exclusively spiritual beliefs. The fifth factor, Social Support (2 items; $\alpha = .723$), reflected perceived emotional connectedness and the availability of supportive interpersonal relationships during stressful experiences. Although brief in structure, the factor demonstrated satisfactory internal consistency and conceptual clarity.

The revised factor labels were selected to improve conceptual clarity and interpretability while maintaining theoretical consistency with contemporary resilience research. This renaming approach follows common psychometric practices in cross-cultural adaptation studies, where factor nomenclature is determined not only by theoretical expectations, but also by the empirical composition and psychological coherence of the extracted dimensions. Overall, the obtained structure supports the multidimensional conceptualization of resilience and suggests that resilience-related psychological functioning in digitally mediated environments involves several differentiated but interconnected adaptive resources.

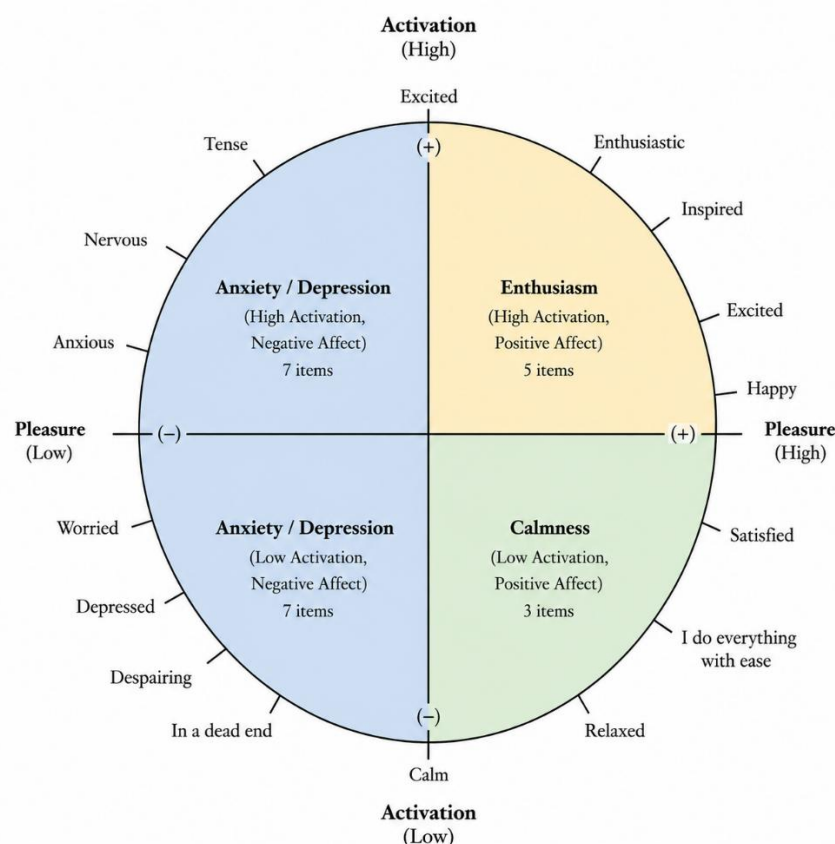
Factor Structure of the IWP Multi-Affect Indicator

The factorial structure of the Bulgarian adaptation of the short version of the IWP Multi-Affect Indicator (Warr, 2016) was also examined through exploratory factor analysis using Principal Component Analysis with Varimax rotation. The instrument assesses affective well-being through emotional states differing in emotional valence and activation level. While Warr’s original circumplex model conceptualizes emotional experience through four affective quadrants — anxiety, depression, enthusiasm, and comfort — cross-cultural adaptations may demonstrate alternative empirical structures depending on linguistic and contextual characteristics.

Figure 1 presents the circumplex structure of the Bulgarian adaptation of the IWP Multi-Affect Indicator based on the dimensions of emotional valence (pleasure) and activation. The figure illustrates the organization of emotional states into three empirically derived affective domains: Emotional Distress, Enthusiastic Emotions, and Calm Emotions. In the Bulgarian adaptation, anxiety- and depression-related emotions converged into a unified Emotional Distress dimension, while positive affect remained differentiated into high-activation enthusiastic emotions and low-activation calm emotional states.

A total of 15 affective descriptors were included in the analysis: enthusiastic, nervous, calm, depressed, happy, anxious, satisfied, despairing, inspired, tense, relaxed, excited, worried, “I do everything with ease,” and “in a dead end.” Figure 1 presents the circumplex structure of the Bulgarian adaptation of the IWP Multi-Affect Indicator based on the dimensions of emotional valence (pleasure) and activation. The figure illustrates the organization of emotional states into three empirically derived affective domains: Emotional Distress, Enthusiastic Emotions, and Calm Emotions. In the Bulgarian adaptation, anxiety- and depression-related emotions converged into a unified Emotional Distress dimension, while positive affect remained differentiated into high-activation enthusiastic emotions and low-activation calm emotional states.

Figure 1. *Circumplex Structure of the Bulgarian Adaptation of the IWP Multi-Affect Indicator*



Sampling adequacy indicators demonstrated excellent suitability of the data for factor analysis (Kaiser–Meyer–Olkin measure = .916; Bartlett’s Test of Sphericity: $\chi^2(105) = 3292.623$, $p < .001$). Three components with eigenvalues greater than 1 were extracted, explaining 67.41% of the total variance. The rotated solution revealed a psychologically meaningful and interpretable structure (see Table 2).

Table 2. *Rotated Factor Matrix of the Bulgarian Adaptation of the IWP Multi-Affect Indicator (Warr 2016)*

Item	Emotional Distress	Enthusiastic Emotions	Calm Emotional States
In a dead end	.816		
Despairing	.774		
Depressed	.767		
Anxious	.704		
Worried	.680		
Nervous	.663		
Tense	.661		
Excited		.791	
Enthusiastic		.779	
Satisfied		.740	
Inspired		.732	
Happy		.700	
Relaxed			.774
Calm			.702
I do everything with ease			.572
Eigenvalue (after rotation)	4.091	3.379	2.642
Explained Variance (%)	27.27	22.53	17.61
Cumulative Variance (%)	27.27	49.80	67.41
Cronbach's α	.916	.856	.722

Note. Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Only factor loadings above .40 are presented.

The first factor, Emotional Distress (7 items), integrated descriptors traditionally associated with both anxiety and depressive affect, including “in a dead end,” “despairing,” “depressed,” “anxious,” “worried,” “nervous,” and “tense.” Rather than forming two separate emotional domains, high-activation anxiety and low-activation depressive affect converged into a broader dimension of psychological distress. This merged structure suggests a substantial semantic and experiential overlap between tension, emotional exhaustion, discouragement, and depressive affect within the Bulgarian adaptation and the examined online context.

The second factor, Enthusiastic Emotions (5 items), included descriptors such as excited, enthusiastic, inspired, happy, and satisfied. These emotional states reflect activated positive affect characterized by energy, motivational involvement, optimism, and psychological engagement. The third factor, Calm Emotions (3 items), included calm, relaxed, and “I do everything with ease,” reflecting low-activation positive emotional states associated with emotional balance, relaxation, and subjective

psychological comfort. Although relatively brief, both subscales demonstrated satisfactory internal consistency and conceptual coherence.

Overall, the obtained structure partially supports Warr's theoretical model while also demonstrating cultural and contextual specificity in the organization of affective experiences. Negative emotional states appeared less differentiated into distinct anxiety and depressive dimensions and were instead experienced as a broader emotional distress construct. In contrast, positive affect remained differentiated into activated enthusiastic emotions and low-activation calm emotional states. The results support the construct validity and applicability of the Bulgarian short version of the IWP Multi-Affect Indicator for research examining emotional functioning, occupational well-being, stress, and resilience in digitally mediated educational and occupational environments.

Results

Descriptive Statistics for the Study Variables

Descriptive statistics were calculated for all resilience and affective well-being variables in order to examine the distributional characteristics of the data and the overall levels of the studied psychological constructs. As presented in Table 3, the variables demonstrated acceptable distributional properties, with skewness and kurtosis values remaining within recommended ranges for parametric analyses. Overall, participants reported relatively higher levels of resilience-related resources and moderate levels of emotional well-being in digitally mediated work and learning environments.

Table 3. *Descriptive Statistics for the Study Variables.*

Variable	M	SD	Skewness	Kurtosis	Min	Max
Adaptive Coping Capacity	3.81	.76	-.50	.01	1.13	5.00
Goal-Directedness	3.98	.75	-.74	.45	1.25	5.00
Personal Agency	3.79	.86	-.42	-.53	1.25	5.00
External Reliance	3.86	.92	-.65	-.02	1.00	5.00
Social Support	3.85	.97	-.79	.07	1.00	5.00
Emotional Distress	2.87	.99	.16	-.70	1.00	5.00
Enthusiastic Emotions	3.36	.83	-.33	.06	1.00	5.00
Calm Emotional States	3.12	.86	.03	-.46	1.00	5.00

Note. M = Mean; SD = Standard Deviation.

Correlations Between Resilience Dimensions and Affective Well-Being Variables

Pearson correlation analysis was conducted to examine the relationships between resilience dimensions and affective well-being variables in online work and learning environments. The obtained results (see Table 4) demonstrated a coherent pattern of

associations supporting the multidimensional relationship between resilience and emotional functioning.

Table 4. *Correlations Between Resilience Dimensions and Affective Well-Being Variables*

Variable	Emotional Distress	Enthusiastic Emotions	Calm Emotional States
Adaptive Coping Capacity	-.533**	.523**	.510**
Goal-Directedness	-.442**	.543**	.375**
Personal Agency	-.341**	.429**	.301**
External Reliance	-.069	.181**	.072
Social Support	-.415**	.436**	.277**

Note. Pearson correlation coefficients are presented. ** $p < .01$ (two-tailed).

Higher levels of adaptive coping, goal-directedness, personal agency, and social support were consistently associated with lower emotional distress and more positive emotional experiences. In particular, adaptive coping capacity and goal-directedness demonstrated the strongest associations with enthusiastic and calm emotional states, suggesting the importance of emotional flexibility, persistence, and self-regulatory functioning for positive emotional adaptation in digitally mediated contexts.

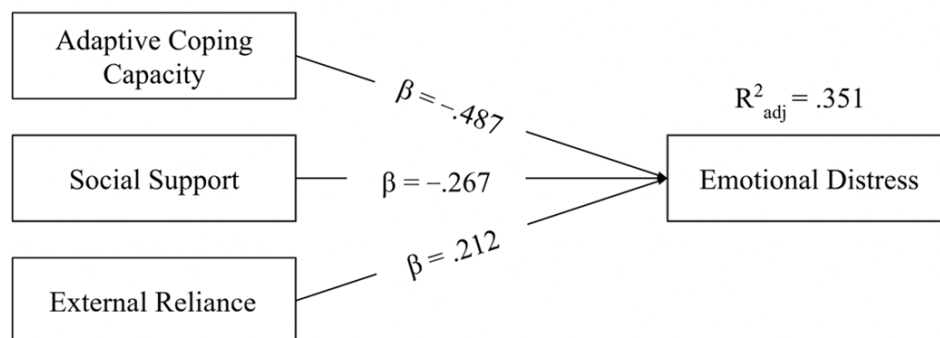
Social support was also positively related to positive emotional experiences and negatively associated with emotional distress, highlighting the protective role of perceived interpersonal connectedness even within predominantly online environments. In contrast, external reliance demonstrated comparatively weaker and less consistent associations with emotional functioning, suggesting that reliance on external sources of meaning or regulation may represent a more context-dependent resilience-related resource. Overall, the correlation patterns support the assumption that resilience-related psychological resources are differentially connected to both positive and negative dimensions of affective well-being.

Resilience Components as Predictors of Emotional Distress

A stepwise multiple regression analysis was conducted to examine the predictive role of resilience dimensions for Emotional Distress in digitally mediated work and learning environments. The final regression model was statistically significant, $F(3, 371) = 68.35, p < .001$, explaining 35.1% of the variance in Emotional Distress (adjusted $R^2 = .351$). Adaptive Coping Capacity emerged as the strongest negative predictor ($\beta = -.487, p < .001$), indicating that greater emotional flexibility and adaptive self-regulation were associated with lower levels of emotional distress. Social Support also demonstrated a significant negative association with Emotional Distress ($\beta = -.267, p < .001$), suggesting a protective role of perceived interpersonal connectedness. In contrast, External Reliance positively predicted Emotional Distress ($\beta = .212, p < .001$), indicating that stronger reliance on external sources of regulation or stability was associated with higher levels of psychological strain. Overall, the model suggests that

emotional distress in online environments is shaped by both adaptive self-regulatory capacities and interpersonal psychological resources (see Fig. 2).

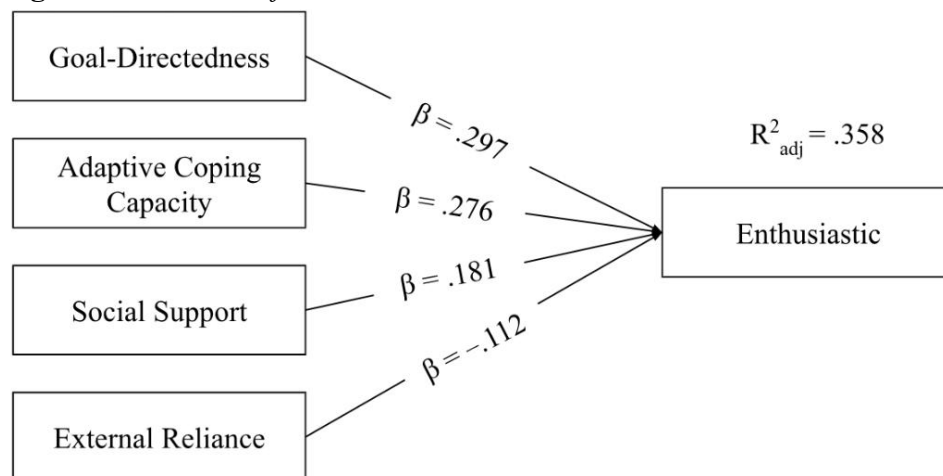
Figure 2. *Predictors of Emotional Distress*



Note. All β coefficients were statistically significant at $p < .001$.

Predictors of Enthusiastic Affect Among Resilience Components

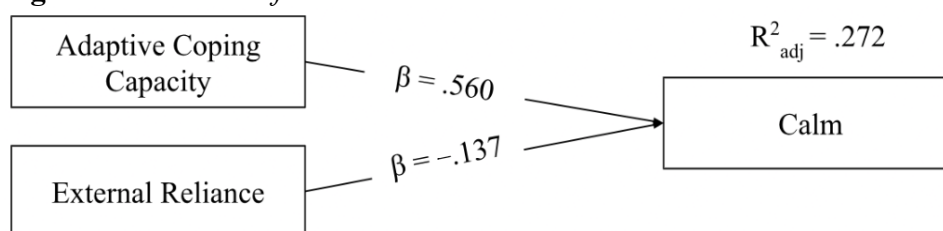
A second stepwise multiple regression analysis examined the predictors of Enthusiastic Affect in digitally mediated work and learning environments. The final regression model was statistically significant, $F(4, 370) = 53.03$, $p < .001$, explaining 35.8% of the variance in Enthusiastic Affect (adjusted $R^2 = .358$). Goal-Directedness emerged as the strongest positive predictor ($\beta = .297$, $p < .001$), suggesting that motivational persistence and future-oriented engagement are closely associated with activated positive emotional experiences in online contexts. Adaptive Coping Capacity also demonstrated a substantial positive association ($\beta = .276$, $p < .001$), indicating the importance of emotional flexibility for maintaining enthusiastic affect. Social Support positively predicted enthusiastic emotions as well ($\beta = .181$, $p < .001$), supporting the role of perceived connectedness in sustaining positive emotional engagement. By contrast, External Reliance showed a negative association with Enthusiastic Affect ($\beta = -.112$, $p < .001$). Overall, the model suggests that enthusiastic emotional functioning in online environments is associated with a combination of motivational persistence, adaptive coping, and interpersonal psychological resources (see Fig. 3).

Figure 3. *Predictors of Enthusiastic Emotions*

Note. All β coefficients were statistically significant at $p < .001$.

Predictors of Calmness Among Resilience Dimensions

The third stepwise multiple regression analysis explored the predictive role of resilience dimensions for Calm Emotional States in digitally mediated work and learning environments. The final regression model was statistically significant, $F(2, 372) = 70.80$, $p < .001$, explaining 27.2% of the variance in Calm Emotional States (adjusted $R^2 = .272$). Adaptive Coping Capacity demonstrated the strongest positive association with Calmness ($\beta = .560$, $p < .001$), highlighting the central importance of emotional self-regulation and psychological flexibility for maintaining low-activation positive emotional states in online contexts. External Reliance, in contrast, demonstrated a significant negative association with Calm Emotional States ($\beta = -.137$, $p < .001$), suggesting that stronger dependence on external sources of stability may be related to reduced emotional equilibrium and recovery capacity. Overall, the model indicates that calm emotional functioning in online environments is strongly associated with adaptive self-regulatory processes rather than with external forms of psychological orientation (see Fig. 4).

Figure 4. *Predictors of Calm Emotions*

Note. All β coefficients were statistically significant at $p < .001$.

Discussion

The present study examined the relationship between psychological resilience and affective well-being among Bulgarian students engaged in online learning, with particular attention to the multidimensional structure of both constructs. The findings suggest a more differentiated relationship than would be expected if resilience were treated as a single, uniformly protective characteristic. Adaptive coping capacity, goal-directedness, personal agency, social support, and external reliance were not equally related to emotional functioning, and their associations also differed across emotional distress, enthusiastic affect, and calm emotional states. This pattern fits well with contemporary approaches that conceptualize resilience as a dynamic and context-dependent process rather than as a fixed personal quality with consistently beneficial effects (Fletcher & Sarkar 2013, Kalisch et al. 2017, Masten 2014, Southwick et al. 2014).

The factor structure of the Bulgarian adaptation of the Connor–Davidson Resilience Scale provides further support for such a multidimensional interpretation. Although the original structure proposed by Connor and Davidson (2003) was only partially reproduced, the five dimensions identified in the present sample (Adaptive Coping Capacity, Goal-Directedness, Personal Agency, External Reliance, and Social Support) formed conceptually meaningful aspects of resilience-related functioning. They reflect different ways in which individuals respond to demands: adapting to change and recovering from difficulties, maintaining commitment to goals, experiencing personal control and agency, drawing on external sources of guidance, and relying on supportive relationships.

Differences from the original factorial structure should be interpreted with some caution, but they are not necessarily unexpected in a linguistic and cultural adaptation. Resilience itself has been defined differently across theoretical traditions, ranging from an individual capacity to a dynamic process that develops through interactions between personal and environmental resources (Fletcher & Sarkar 2013, Masten 2014, Southwick et al. 2014). Ungar’s (2011) social-ecological perspective is particularly relevant here, as it emphasizes that the resources involved in successful adaptation acquire their meaning within specific social and cultural contexts. The structure observed in the present sample may therefore reflect not only psychometric differences from the original scale but also the way resilience-related resources are organized and understood within this particular educational and cultural setting. Replication in independent Bulgarian samples would be necessary before stronger conclusions could be drawn.

The adaptation of the IWP Multi-Affect Indicator also produced a structure that retained important elements of Warr’s (2016) circumplex model while showing some culturally and linguistically specific features. The adaptation process was guided by both theoretical and psychometric considerations. Two descriptors from the original instrument, “dejected” and “laid-back,” were excluded because of substantial semantic overlap with other retained emotional states and difficulties in identifying Bulgarian equivalents that were both conceptually precise and natural in everyday language. Other descriptors were linguistically refined to improve comprehensibility while preserving their original psychological meaning. These decisions resulted in a 15-item

version organized around three broader dimensions: Emotional Distress, Enthusiastic Emotions, and Calm Emotional States.

One of the more interesting features of this structure was the convergence of anxiety- and depression-related descriptors into a single Emotional Distress dimension. Warr's model distinguishes anxiety and depression partly through differences in activation level, whereas in the present sample tension, worry, nervousness, discouragement, and depressive affect were empirically less distinct. This may partly reflect linguistic characteristics of the adapted descriptors, but the context in which the emotions were experienced may also be relevant. Online learning can involve prolonged attentional demands, reduced opportunities for psychological recovery, and a blurring of boundaries between academic responsibilities and personal life. Under such conditions, anxious activation and emotional depletion may coexist and become subjectively difficult to separate. Related patterns of anxiety, emotional fatigue, and reduced engagement have also been observed in studies of remote learning (Akese et al. 2024, Nuñez et al. 2022). Nevertheless, the present factor structure should not be taken as evidence that anxiety and depressive affect are generally undifferentiated in the Bulgarian context; this remains an empirical question for future research.

Positive affect, by contrast, remained differentiated into Enthusiastic Emotions and Calm Emotional States. This distinction is theoretically important. Feeling enthusiastic, excited, inspired, or energetic is not psychologically identical to feeling calm, relaxed, or at ease, even though both represent positive emotional experiences. Warr's circumplex framework is useful precisely because it allows these differences in activation to be considered alongside emotional valence (Warr 2016, Warr et al. 2014). The present findings therefore support the value of examining affective well-being through differentiated emotional states rather than reducing it to a general positive–negative affect distinction.

The relationships between resilience dimensions and these emotional states add another layer to this picture. Adaptive Coping Capacity showed the most consistent pattern across the affective outcomes. Higher adaptive coping was associated with lower Emotional Distress and higher levels of both Enthusiastic Emotions and Calm Emotional States. It also emerged as the strongest unique predictor of Emotional Distress and Calm Emotional States in the regression models. The ability to adjust to change, maintain functioning under pressure, tolerate difficult emotions, and recover following setbacks may therefore be particularly relevant to emotional functioning in an online learning context. This interpretation is consistent with process-oriented accounts of resilience, which emphasize flexible adjustment to changing demands rather than simply enduring or resisting stress (Kalisch et al. 2017, Masten 2014). It also corresponds with findings reported by Ge (2025), where resilience among students engaged in online learning was associated with lower emotional exhaustion, stronger engagement, and self-regulated learning.

The particularly strong relationship between Adaptive Coping Capacity and Calm Emotional States is worth considering separately. Calmness in an online environment may represent more than the absence of distress. Maintaining a sense of emotional equilibrium while managing sustained cognitive demands, deadlines, independent study, and reduced separation between academic and personal space requires some capacity for emotional recovery and flexible self-regulation. The

present results suggest that these processes may be especially closely related to adaptive coping. Similar work has linked emotional resilience resources with greater emotional flexibility and psychological well-being under sustained demands (Bagdžiūnienė et al. 2023).

Goal-Directedness followed a somewhat different pattern. Its strongest contribution was observed in relation to Enthusiastic Emotions. Persistence, a sense of purpose, commitment to goals, and willingness to continue despite obstacles are conceptually closer to energetic engagement than to low-activation states such as calmness. This distinction is consistent with research showing that activated positive affect is particularly relevant to proactive engagement and behavior (Madrid et al. 2014). Zhang (2025) similarly emphasizes the importance of emotional engagement for maintaining psychological involvement in online learning. The present results add to this literature by suggesting that the resilience-related resources associated with enthusiasm are not necessarily the same as those most closely related to emotional balance.

Social Support was another meaningful component of the models. Greater perceived support was associated with lower Emotional Distress and higher Enthusiastic Emotions. This finding is particularly relevant in digitally mediated learning, where the immediacy of interpersonal contact may be reduced even though the psychological need for connection remains. Abbasi et al. (2025) similarly reported associations between online social connectedness, emotional resilience, and digital well-being, while Bagdžiūnienė et al. (2023) highlighted the relevance of interpersonal resources to emotional functioning under sustained demands.

The role of Social Support also broadens the interpretation of resilience beyond individual coping skills. If resilience is approached primarily as something that resides within the individual, supportive relationships can easily be treated as secondary influences. Social-ecological approaches challenge this distinction by viewing access to interpersonal and environmental resources as part of the adaptive process itself (Masten 2014, Ungar 2011). From this perspective, the association observed here is not simply an additional protective effect of social support; it reflects the broader relational context in which students manage academic and emotional demands.

The findings concerning External Reliance are particularly informative because they do not fit a straightforward protective model of resilience. After the other resilience dimensions were taken into account, External Reliance was positively associated with Emotional Distress and negatively associated with Enthusiastic Emotions and Calm Emotional States. This contrasts with the pattern observed for Adaptive Coping Capacity, Goal-Directedness, and Social Support and suggests that dimensions identified within a resilience measure should not automatically be assumed to function in the same adaptive direction.

External Reliance included items related to intuition, faith, fate, and other sources of guidance that are not entirely based on deliberate personal control. One possible interpretation is that stronger reliance on such sources becomes more salient when individuals feel less certain about their ability to manage demands independently. Online learning often requires students to structure their own activities, regulate attention, make decisions, and maintain engagement without continuous external

organization. Under these circumstances, greater external reliance may coexist with lower confidence in autonomous regulation and greater emotional strain.

This interpretation, however, should remain tentative. The cross-sectional design does not establish the direction of the relationship. External reliance may be associated with greater distress, but the reverse is equally plausible: students who are already experiencing emotional strain may turn more strongly toward intuition, faith, fate, or other external sources of stability and meaning. The psychological significance of these items may also vary across cultural and linguistic contexts. External Reliance should therefore not be characterized simply as an “unhelpful” or maladaptive component of resilience. Its role appears to be more context-dependent and deserves further investigation.

This finding is also relevant to the broader theoretical debate introduced earlier. Infurna and Luthar (2018) have questioned assumptions that resilience follows a common or uniform pattern, noting that conclusions about successful adaptation can change substantially depending on how resilience is conceptualized and measured. Hill et al. (2024) go further in questioning whether resilience should always be regarded as inherently desirable, particularly when adaptation is understood simply as maintaining or returning to a previous level of functioning. The present results do not directly test these theoretical propositions, but the contrasting relationships across resilience dimensions are consistent with the need for a more cautious interpretation. A characteristic associated with adaptation in one domain or context may not necessarily have the same meaning or consequences in another.

More generally, the findings underscore the value of examining resilience and affective well-being as multidimensional constructs. A single global resilience score would have concealed important differences between adaptive coping, motivational persistence, interpersonal support, personal agency, and external reliance. Similarly, a global indicator of emotional well-being would have obscured the distinction between emotional distress, activated positive affect, and calm positive affect. The present results suggest that these distinctions are not merely psychometric: different resilience-related resources appear to have different relationships with particular forms of emotional experience.

The educational context should also be considered when interpreting these associations. Although participants varied in age, they shared the experience of higher education during a period of online learning. Digitally mediated education places substantial responsibility on students to organize their time, regulate attention and emotion, remain engaged with academic goals, and cope with reduced separation between study and personal life. Within this setting, adaptive coping and goal-directedness may be especially relevant, while the findings for Social Support remind us that adaptation cannot be reduced to individual self-regulation. The quality of interpersonal relationships, educational demands, technological conditions, and opportunities for psychological recovery are all part of the environment within which resilience is expressed.

These observations have practical implications for psychological assessment and support in online educational settings. The findings favor a multidimensional assessment of resilience rather than reliance on a single overall score. Adaptive coping, goal-directedness, and social support may represent particularly relevant areas

when designing preventive or supportive interventions, although the present cross-sectional results should not be interpreted as evidence that changing these characteristics will necessarily produce changes in emotional well-being. Previous intervention research nevertheless suggests that resilience-related capacities can be strengthened through structured programs and may be accompanied by improvements in emotional regulation and reductions in psychological distress (Stoliker et al. 2022). In practice, it may therefore be more useful to identify the specific resources a student can draw upon than to characterize the individual simply as more or less resilient.

Several limitations should be acknowledged. The study relied on self-report measures, and the associations may therefore be influenced by shared-method variance and individual differences in the interpretation of questionnaire items. The cross-sectional design is another important limitation. Although the regression models identify unique statistical contributions of individual resilience dimensions, they cannot establish causal direction. Longitudinal research would be needed to examine whether resilience-related resources precede changes in emotional functioning, whether emotional experiences alter the way these resources are perceived and used, or whether both develop together over time. Such designs would also allow the examination of different trajectories of adaptation, as emphasized in process-oriented resilience research (Bonanno 2004, Kalisch et al. 2017).

The linguistic adaptation of the two measures should also be considered when interpreting the findings. The empirical structures did not fully reproduce the original models, although the resulting dimensions were conceptually coherent and generally demonstrated satisfactory internal consistency. The culturally sensitive adaptation of the affective measure is a strength in terms of comprehensibility and contextual relevance, but the structures identified here require further psychometric examination. Confirmatory factor analyses and replication in independent Bulgarian samples would provide a stronger basis for evaluating their stability.

Finally, the characteristics of the sample limit the generalizability of the results. Participants ranged from 18 to 48 years, but this variability occurred within a shared educational context: all were undergraduate or master's students engaged in online learning. The sample was therefore heterogeneous in chronological age but relatively homogeneous in relation to the context central to the study. Nevertheless, the relatively young mean age and the specific Bulgarian higher-education setting should be kept in mind. Future studies could examine whether the same relationships are found in other educational settings, age groups, occupational populations, and forms of digitally mediated activity.

Overall, the findings point to a more nuanced relationship between resilience and affective well-being than a simple protective-factor model would suggest. Adaptive Coping Capacity emerged as the most consistent correlate of emotional functioning, while Goal-Directedness was particularly relevant to enthusiastic affect and Social Support was associated with both lower distress and greater positive engagement. External Reliance showed a different pattern, illustrating the importance of considering the meaning and function of individual resilience dimensions rather than assuming that they are uniformly beneficial. At the same time, the differentiation between Emotional Distress, Enthusiastic Emotions, and Calm Emotional States demonstrates the value of approaching well-being with similar conceptual precision. Resilience in

digitally mediated learning appears to be best understood not as a single personal quality, but as a set of interrelated resources whose relevance depends on the emotional outcome, the individual, and the context in which adaptation takes place.

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References

- Abbasi PN, Khan SA, Bashir AR, Nasir M (2025) Thriving in the digital age: How self-compassion, emotional resilience, and online social connectedness shape young freelancers' digital well-being. *Journal for Social Science Archives*, 3(1), 588–599. <https://doi.org/10.59075/jssa.v3i1.143>
- Akese AR, Shaikh HL, Sheraz S, Mughal FA (2024) The psychological effects of remote learning on students: Examining social isolation, anxiety, and self-discipline. *Review of Applied Management and Social Sciences*, 7(4), 319–332. <https://doi.org/10.47067/ramss.v7i4.383>
- Bagdžiūnienė D, Kazlauskienė A, Nasvytienė D, Sakadolskis E (2023) Resources of emotional resilience and its mediating role in teachers' well-being and intention to leave. *Frontiers in Psychology*, 14, 1305979. <https://doi.org/10.3389/fpsyg.2023.1305979>
- Bonanno GA (2004) Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist*, 59(1), 20–28. <https://doi.org/10.1037/0003-066X.59.1.20>
- Connor KM, Davidson JRT (2003) Development of a new resilience scale: The Connor–Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, 18(2), 76–82. <https://doi.org/10.1002/da.10113>
- Fletcher D, Sarkar M (2013) Psychological resilience: A review and critique of definitions, concepts, and theory. *European Psychologist*, 18(1), 12–23. <https://doi.org/10.1027/1016-9040/a000124>
- Ge D (2025) Resilience and online learning emotional engagement among college students in the digital age: A perspective based on self-regulated learning theory. *BMC Psychology*, 13, 326. <https://doi.org/10.1186/s40359-025-02631-1>
- Hill Y, Morison M, Westphal A, Gerwonn S, Ricca BP (2024) When resilience becomes undesirable—A cautionary note. *New Ideas in Psychology*, 73, 101076. <https://doi.org/10.1016/j.newideapsych.2024.101076>
- Infurna FJ, Luthar SS (2018) Re-evaluating the notion that resilience is commonplace: A review and distillation of directions for future research, practice, and policy. *Clinical Psychology Review*, 65, 43–56. <https://doi.org/10.1016/j.cpr.2018.07.003>
- Kalisch R, Baker DG, Basten U, Boks MP, Bonanno GA, Brummelman E, Chmitorz A, Fernández G, Fiebach CJ, Galatzer-Levy I, Geuze E, Groppa S, Helmreich I, Hendler T, Hermans EJ, Jovanovic T, Kubiak T, Lieb K, Lutz B, Müller MB, ... Kleim B (2017) The resilience framework as a strategy to combat stress-related disorders. *Nature Human Behaviour*, 1(11), 784–790. <https://doi.org/10.1038/s41562-017-0200-8>
- Madrid HP, Patterson MG, Birdi KS, Leiva PI, Kausel EE (2014) The role of weekly high-activated positive mood, context, and personality in innovative work behavior: A

- multilevel and interactional model. *Journal of Organizational Behavior*, 35(2), 234–256. <https://doi.org/10.1002/job.1867>
- Masten AS (2014) Global perspectives on resilience in children and youth. *Child Development*, 85(1), 6–20. <https://doi.org/10.1111/cdev.12205>
- Medina-Garrido JA, Biedma-Ferrer JM, Ramos-Rodríguez AR (2017) Relationship between work-family balance, employee well-being and job performance. *Academia Revista Latinoamericana de Administración*, 30(1), 40–58. <https://doi.org/10.1108/ARLA-08-2015-0202>
- Núñez TR, Pallasch N, Radtke T (2022) Students' emotional well-being and academic functioning before, during, and after lockdown in Germany: Cohort study. *JMIR Formative Research*, 6(11), e34388. <https://doi.org/10.2196/34388>
- Shi Q, Xu X, Zhang Y, Hu B (2025) Research on psychological resilience, digital competence, and self-efficacy in online TCFL teachers. *Behavioral Sciences*, 15(3), 366. <https://doi.org/10.3390/bs15030366>
- Southwick SM, Bonanno GA, Masten AS, Panter-Brick C, Yehuda R (2014) Resilience definitions, theory, and challenges: Interdisciplinary perspectives. *European Journal of Psychotraumatology*, 5(1), 25338. <https://doi.org/10.3402/ejpt.v5.25338>
- Stoliker BE, Vaughan AD, Collins J, Black M, Anderson GS (2022) Building personal resilience following an online resilience training program for BScN students. *Western Journal of Nursing Research*, 44(8), 755–764. <https://doi.org/10.1177/01939459211017240>
- Ungar M (2011) The social ecology of resilience: Addressing contextual and cultural ambiguity of a nascent construct. *American Journal of Orthopsychiatry*, 81(1), 1–17. <https://doi.org/10.1111/j.1939-0025.2010.01067.x>
- Warr P (2016) IWP Multi-Affect Indicator. Institute of Work Psychology, University of Sheffield.
- Warr PB, Bindl UK, Parker SK, Inceoglu I (2014) Four-quadrant investigation of job-related affects and behaviours. *European Journal of Work and Organizational Psychology*, 23(3), 342–363. <https://doi.org/10.1080/1359432X.2012.744449>
- Zhang Y (2025) Assessing and enhancing emotional well-being in online learning for international undergraduates in China. *Journal of International Students*, 15(4), 209–228. <https://doi.org/10.32674/cfbja013>