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Adaptation of the State Desperation Scale: Its Association with Intolerance of Uncertainty, Entrapment and Resilience

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Título: Adaptación de la Escala de Estado de Desesperación: su asociación con la intolerancia a la incertidumbre, el atrapamiento y la resiliencia.

Resumen: La desesperación es un marco conceptual significativo que dilucida el profundo sentimiento de desesperación de los individuos y su ímpetu para emprender acciones inmediatas en respuesta a él. La presente investigación comprende tres estudios destinados a traducir la Escala de Desesperación Estatal al idioma turco. La Escala de Desesperación Estatal de 9 ítems se validó mediante Análisis Factorial Confirmatorio en el Estudio I, que involucró un tamaño de muestra de 530 participantes. El análisis de invariancia de la medición reveló una falta de invariancia estructural y métrica observada entre diferentes grupos de género. El análisis de las respuestas de los ítems indicó que todos los ítems exhibieron una diferenciación significativa. La Escala de Desesperación Estatal demostró un alto nivel de confiabilidad, como lo evidencian los coeficientes de confiabilidad de α de Cronbach, β de McDonald y ϰ6 de Guttmann. En el segundo estudio, se utilizó un tamaño de muestra de 505 participantes para realizar análisis de correlación y de red. El análisis reveló una correlación significativa entre la desesperación y los cinco grandes rasgos de personalidad, así como la depresión, la ansiedad y el estrés. El Estudio III empleó análisis de correlación y modelos de ecuaciones estructurales para examinar la influencia mediadora de la intolerancia a la incertidumbre y el atrapamiento en la relación entre la desesperación y la resiliencia psicológica. El tamaño de la muestra fue de 443 participantes. La resiliencia psicológica se predice mediante la desesperación, donde el atrapamiento y la intolerancia a la incertidumbre desempeñan un papel mediador. Los hallazgos del estudio indican que la adaptación turca de la Escala de Desesperación Estatal presenta sólidas propiedades psicométricas.

Palabras clave: Situación de desesperación. Intolerancia a la incertidumbre. Atrapamiento. Resilencia. Adaptación de la escala.

Abstract: Desperation is a significant conceptual framework that elucidates individuals' profound sense of despair and their impetus to engage in immediate action in response to it. The present investigation comprises three studies aimed at translating the State Desperation Scale into the Turkish language. The 9-item State Desperation Scale was validated using Confirmatory Factor Analysis in Study I, which involved a sample size of 530 participants. The analysis of measurement invariance revealed a lack of structural and metric invariance observed among different gender groups. The analysis of item responses indicated that all items exhibited significant differentiation. The State Desperation Scale demonstrated a high level of reliability, as evidenced by the reliability coefficients of Cronbach's α, McDonald's β, and Guttmann's ϰ6. In the second study, a sample size of 505 participants was used to conduct both correlation and network analysis. The analysis revealed a significant correlation between desperation and the big five personality traits, as well as depression, anxiety, and stress. Study III employed correlation analysis and structural equation modeling to examine the mediating influence of intolerance of uncertainty and entrapment on the relationship between desperation and psychological resilience. The sample size for this study was 443 participants. Psychological resilience is predicted by state desperation, with entrapment and intolerance of uncertainty playing a mediating role. The study findings indicate that the Turkish adaptation of the State Desperation Scale exhibits robust psychometric properties.

Keywords: State desperation. Intolerance of uncertainty. Entrapment. Resilience. Scale adaptation.

Introduction

The term "desperation" encompasses the experience of losing hope and succumbing to despair, as well as a state of hopelessness that prompts a sense of urgency (Merriam-Webster, n.d.). Desperation encompasses both hopelessness and impetuousness simultaneously. According to Vatan and Dağ (2009), desperation is a reliable indicator of low self-esteem and difficulties in the workplace. Individuals who feel desperation are more prone to experiencing suicidal ideation, similar to those who are depressed (Garlow et al., 2008; Hendin et al., 2004). According to Hiroto and Seligman (1975), desperation is characterized by the individual's experience of passivity, a lack of agency, and an inability to exert control over their life. These consequences arise from negative life events and traumas that the individual perceives as failures and endeavors to exert control over. Conversely, based on the results of an economic study, retirees who are dissatisfied with their retirement income experience higher levels of despair in comparison to those who are content with their income (Bayram & Yavuz, 2019).

Desperation can be assessed based on one's needs. In the present context, the phenomenon of desperation, as exemplified in Maslow's hierarchy of needs (Maslow & Lewis, 1987), manifests as a profound desire for a sense of belonging among individuals, rendering children and adolescents susceptible to instances of bullying. According to Marion et al. (2014), it is widely believed that negative behaviors, such as bullying, can be attributed to a strong desire for a sense of belonging. The concept of desperation is also explored within the realm of love, where it is intricately linked to various themes, including intimacy, anxiety, dependence, idealization, and insecurity. It serves as a manifestation of anxiety and urgency that stem from the experience of intimacy (Sperling, 1985). Desperation is a profound sense of despair that arises from a lack of hope for both the present and the future. It induces a state of panic in individuals and necessi-

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tates psychological assistance due to its association with grave dangers, such as suicidal ideation.

The concept of desperation is often characterized as being closely associated with feelings of hopelessness. Steinbock (2007) posits that desperation can be understood as a manifestation of hopelessness. This state of desperation leads individuals to exhibit careless and impatient behavior, perceiving effort as a final recourse. In a state of despair, individuals relinquish their pursuit of the desired outcome and cease engaging in hope-related behaviors such as exerting control, making guesses, experiencing worry, and engaging in rumination. Conversely, the individual feeling helpless is anticipating the desired result (Kwong, 2023). Consequently, the conviction in the feasibility of the outcome perpetuates a state of uncertainty and ongoing anguish for the individual experiencing desperation. Nevertheless, the individual holds a pessimistic outlook regarding the feasibility of attaining this result (Özdemir et al., 2020). This individual experiences anxiety and distress due to being trapped between two conflicting factions. When an individual experiences a state of being inundated with pessimistic thoughts and emotions regarding the likelihood of the desired outcome not materializing, they are prompted to acknowledge the potential for the outcome to be attained, albeit with a challenging sense of optimism. Subsequently, when he directs his attention towards the possibility of attaining such a result, he is once again inundated with thoughts and emotions that imply otherwise (Kwong, 2023). It is imperative to analyze the correlation between desperation and intolerance of uncertainty due to the current state of uncertainty.

Uncertainty intolerance refers to an individual's inclination to perceive a negative event as negative, irrespective of its likelihood of happening, and is a constituent of anxiety disorders (Carleton et al., 2007). Furthermore, the correlation between desperation and hope, psychological resilience, and intolerance of uncertainty indicates the importance of investigating the connection between desperation and these concepts (Sarıçam et al., 2020). In addition, resilience and neuroticism are known to be serial mediators between intolerance of uncertainty and perceived stress (Xu et al., 2023). Psychological resilience refers to the capacity to regain one's previous state and bounce back from challenging situations (Earvolino-Ramirez, 2007). The significance of psychological resilience for individuals experiencing despair becomes evident when examining the correlation between despair and suicide. According to a study conducted by Mohyadini et al. (2015), there is evidence to suggest a correlation between desperation and suicide. The study also found that cognitive-behavioral group therapy is an effective intervention in reducing desperation and mitigating negative evaluation, lack of justification, and negative attitudes towards the future.

When examining the constituents of despair, it becomes evident that there exist two fundamental elements: emotion and motivation. Among these, the emotional component signifies the sensation of despair in a state of extreme need, whereas the motivational component signifies the aspect of desperation that gives rise to a sense of immediacy. The study provides support for comprehending the pressing nature of desperation, elucidating the sensation of "panic" as a heightened and exaggerated state of desperation. Consequently, panic elicits a sense of extreme urgency. Desperation can be defined as the state of being unable to exert control over the circumstances that compel individuals to relinquish valuable and desirable aspects pertaining to their survival, self-interest, and material possessions. Desperation is regarded as a form of entrapment in this particular context (Blum, 1996). The central motif of entrapment revolves around the longing to take action and break free and pertains to the adverse emotions that emerge from an individual's encounter with a "failed struggle" and the belief that the defeating circumstance is insurmountable or unavoidable (Gilbert & Allan, 1998). Entrapment, similar to desperation, is linked to suicidal ideation (Taylor et al., 2009; Türk et al., 2024). According to a study conducted by Zeman et al. (2019), there was a significant increase in negative feelings and thoughts, confusion and dreams of escape, disharmony, loneliness, and hopelessness scores as desperation scores increased.

The examination of desperation can also be conducted within the framework of personality traits. Desperation can be considered as a state of despair (Stevenor & Zickar, 2023). Westerhof et al. (2015) conducted a study to investigate the correlation between despair and the big five personality traits. The study's findings linked neuroticism to feelings of desperation and explained the association between depressive symptoms and despair. Although they are not the same constructs, the conceptual similarity between despair and desperation leads to similar outcome expectations for desperation in terms of personality traits. McCrae and Costa (1997) formulated the Big Five Factor Model, a personality theory that outlines five fundamental traits that distinguish individuals from each other. According to Das et al. (2019), personality is typically characterized by five key factors, namely openness, neuroticism, agreeableness, conscientiousness, and extraversion. The aforementioned theory is a commonly employed framework for comprehending the diverse behavioral reactions of individuals to various events (Carter et al., 2013). Researchers (Bayrami et al., 2012; Fabella, 2016; Mishra & Datta, 2019) have conducted several studies to investigate the correlation between hope and hopelessness with psychological characteristics. Given these factors, it is advisable to investigate the correlation between desperation and personality traits.

The Present Study

The fact that one's sense of desperation is seen as important in decision-making, especially in high-stress situations, as well as being related to other constructs such as depression, anxiety, affect, and coping, means desperation needs to be measurable so that what is said about desperation does not remain as a hypothesis (Hannan & Hackathorn, 2022). This

measurement instrument provides individuals with the chance to assess two distinct subscales of desperation, namely emotional and motivational. The emotional subscale pertains to an individual's feelings of hopelessness as they contemplate the future. On the contrary, the motivational subscale pertains to an individual's inclination to engage in urgent actions. In conjunction with the state desperation scale, there is a need to underscore the utilization of a measurement instrument within the field of mental health. The objective of this study is to develop a measurement instrument for assessing state desperation in Turkish culture. This approach enables a comprehensive understanding of individuals' levels of desperation by incorporating dimensions of emotion and motivation. Additionally, it facilitates the identification of other concepts associated with desperation and facilitates the execution of studies pertaining to pertinent solutions, interventions, and approaches.

Study I

The primary objective of Study I is to produce a Turkish translation of the State Desperation Scale. The initial stage of the study will involve the implementation of Confirmatory Factor Analysis (CFA), measurement invariance, and Item Response Theory (IRT) in order to achieve the research objectives. Consequently, the assessment of the scale's reliability will encompass the computation of Cronbach's alpha, McDonald's omega, and Guttmann lambda coefficients.

Method

Participants

In the study, I employed convenience sampling to select participants. A total of 530 participants, consisting of 438 women (82.6%) and 92 men (17.4%), were surveyed online from different provinces in Turkey. The study included participants with diverse educational backgrounds, spanning from 18 to 49 years of age. The participants exhibited a mean age of 21.68 years, accompanied by a standard deviation of 3.95. A considerable percentage of the participants possessed a higher education at the university level (N = 256, 48.3%), while the majority of participants had completed high school education (N = 270, 50.9%). The majority of participants (N = 393, 74.2%) exhibited a moderate socio-economic status. Table 1 displays details regarding the participants.

Table 1
Descriptive information of the participants

	Study 1		Study 2		Study 3	
	Frequency	%	Frequency	%	Frequency	%
Gender						
Female	438	82.6	422	83.6	355	80.1
Male	92	17.4	83	16.4	88	19.9
Education level						
High school	270	50.9	268	53.1	247	55.8
Bachelor degree	256	48.3	233	46.1	192	43.3
Graduate	5	0.8	4	0.8	4	0.9
Marital status						
Married	33	6.2	27	5.3	40	9.0
Single	497	93.8	478	94.7	403	91.0
Socio-economic status						
Very low	19	3.6	24	4.8	21	4.7
Low	89	16.8	78	15.4	81	18.3
Middle	393	74.2	372	73.7	312	70.4
High	25	4.7	27	5.3	26	5.9
Very high	4	0.8	4	0.8	3	0.7

Data analysis

After obtaining the necessary permissions for the measurement tools used in the study, the scales were administered using the Google Form to individuals who volunteered to participate in the study and accepted informed consent. The study was designed in accordance with the Declaration of Helsinki. To verify the factor structure of the Turkish State Desperation Scale, CFA was conducted using the AMOS program. The goodness-of-fit index (GFI), normed fit index (NFI), and confirmatory fit index (CFI) ≥ .90, root mean squared error of approximation (RMSEA), and standardized root-mean-square residual (SRMR) ≤ .08 were indicators of acceptable fit (Hu & Bentler, 1999; Marsh et al., 2004). In addition, the factor structure for measurement invariance by gender was assessed to assess equivalence. This was done to determine whether there were differences between male and female participants. In this context, configurational, metric, and scalar analyses were tested. As suggested in the literature, ΔCFI < .010 can be considered an indicator of measurement invariance between different groups (Chen, 2007; Cheung & Rensvold, 2002).

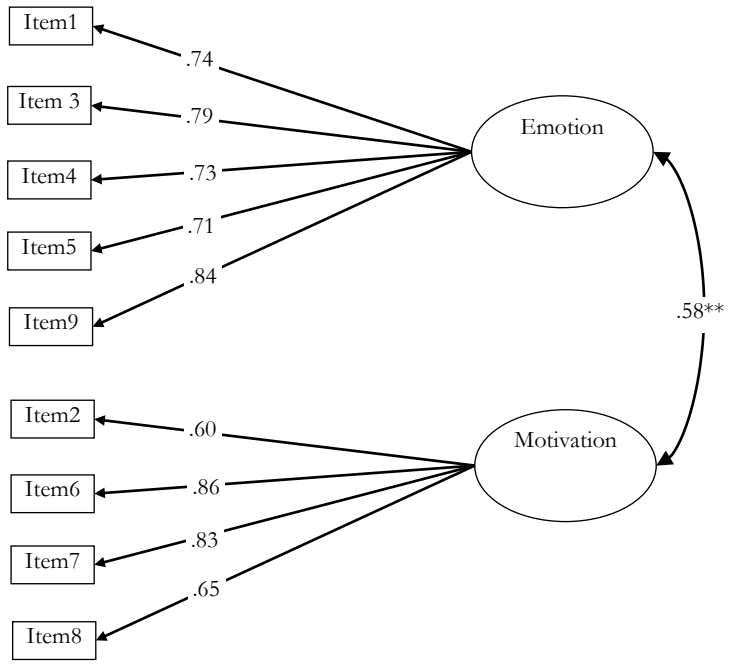
Chalmers (2012) used IRT to assess the scale's discrimination, complexity, and informativeness. Additionally, IRT

provides more accurate and complete individual and item data than Classical Test Theory. People use IRT to study their responses to scaled questions (Baker, 2001). The value ranges were categorized as follows: 0 (none), .01- .34 (very low), .35- .64 (low), .65- 1.34 (moderate), 1.35-1.69 (high), 1.70 and above (very high), and zero or higher (excellent).

Results

CFA was conducted to test the Turkish State Desperation Scale model. While performing CFA, two different latent variables were drawn since the scale has two subdimensions. Regarding the fit statistics, the chi-square statistic was significant, probably due to the size of the sample (Hair et al., 2014), but the $\chi 2/df$ ratio ($\chi 2/df = 3.923 \leq 5$), SRMR ($.04 \leq .08$), RMSEA ($.07 \leq .08$), GFI ($.959 \geq .90$), NFI ($.956 \geq .90$), RFI ($. 939 \geq .90$), IFI ($.967 \geq .90$), TLI ($.954 \geq .90$), and CFI ($.967 \geq .90$) were within the limits of acceptance of the model. All standardized factor loadings for the items were significant ($p< .001$) and were .74 (item 1), .71 (item 3), .79 (item 4), .73 (item 5), .84 (item 9) for the emotional dimension and .60 (item 2), .85 (item 6), .83 (item 7), .65 (item 8), .59 for the motivation dimension. The factor loadings of the Turkish State Desperation Scale as a result of path analysis are shown in Figure 1.

Figure 1
Desperation Scale: Emotion, A 5-item Path Diagram and Factor Loadings; Motivation, A 4-item Path Diagram and Factor Loading.



Measurement invariance

After the Turkish State Desperation Scale CFA results were approved, the scale was analyzed according to gender. Configurational, metric and scalar invariance tests were then performed. The results are presented in Table 2.

As can be seen in Table 2, the measurement invariance analysis supported both configurational and metric invariance of the Turkish State Desperation Scale across genders (ΔCFI =.027) and the scalar model (ΔCFI =.001) due to both goodness of fit and ΔCFI values. This indicates that the items on the Turkish State Desperation Scale have the same meaning for men and women.

Table 2
Fit indices of gender invariance

Invariance	χ^2	*df*	χ^2/df	$\Delta\chi^2$	⊿df	*p*	NFI	TLI	SRMR	RMSEA	CFI	ΔCFI	⊿Mc NCI	⊿gamma hat
Configural invariance	137.417	52	2.643	-	-	-	.941	.948	.050	.056	.962	-	-	-
Metric invariance	209.689	62	3.382	72272.00	10	.000	.911	.924	.067	.067	.935	.027	.000	0.0030
Scalar invariance	218.769	69	3.171	9080.00	7	.000	.907	.931	.067	.064	.934	.001	.000	0.00024

Item Response Theory

IRT is a popular method for evaluating educational instruments and is now increasingly used in personality measurement (Colledani et al., 2019). These key aspects of IRT parameters can be visually represented in an S-shaped curve known as the item characteristic curve (ICC). Since the Turkish State Desperation Scale has a five-point Likert-type scale, the ICC analysis was conducted with the Graduated Response Model (GRM). IRT results are presented in figure 2, figure 3 and table 3.

Table 3
Item Response Theory parameter estimates for the State Desperation Scale.

Item	Item parameter estimates				
	a	b_1	b_2	b_3	b_4
1. Şu anda kendimi umutsuz hissediyorum.	2.11	-0.95	-0.15	1.01	1.58
2. Şu anda bir şeyler yapmam/harekete geçmem gerekiyormuş gibi hissediyorum.	0.82	-3.51	-1.96	-0.20	1.37
3. Şu anda kontrolüm yokmuş gibi hissediyorum.	2.29	-0.64	0.09	0.97	1.61
4. Şu anda yardıma ihtiyacım varmış gibi hissediyorum.	2.86	-0.58	0.08	0.94	1.40
5. Şu anda kendimi yalnız hissediyorum.	2.19	-0.55	0.12	0.95	1.55
6. Şu anda bir şeyler yapmak/harekete geçmek sanki acilmiş gibi hissediyorum.	1.75	-0.96	-0.22	0.78	1.47
7. Şu anda hızlı hareket etmem gerekiyormuş gibi hissediyorum.	1.47	-1.14	-0.22	0.86	1.63
8. Şu anda bir şeyler yapmak/harekete geçmek için kendimi çıldırmış gibi hissediyorum.	1.51	-0.31	0.63	1.79	2.41
9. Şu anda kendinizi ne kadar çaresiz hissediyorsunuz?	3.23	-0.41	0.20	0.91	1.38

Figure 2
Item characteristics curve for the Emotion dimension of the Turkish State Desperation Scale

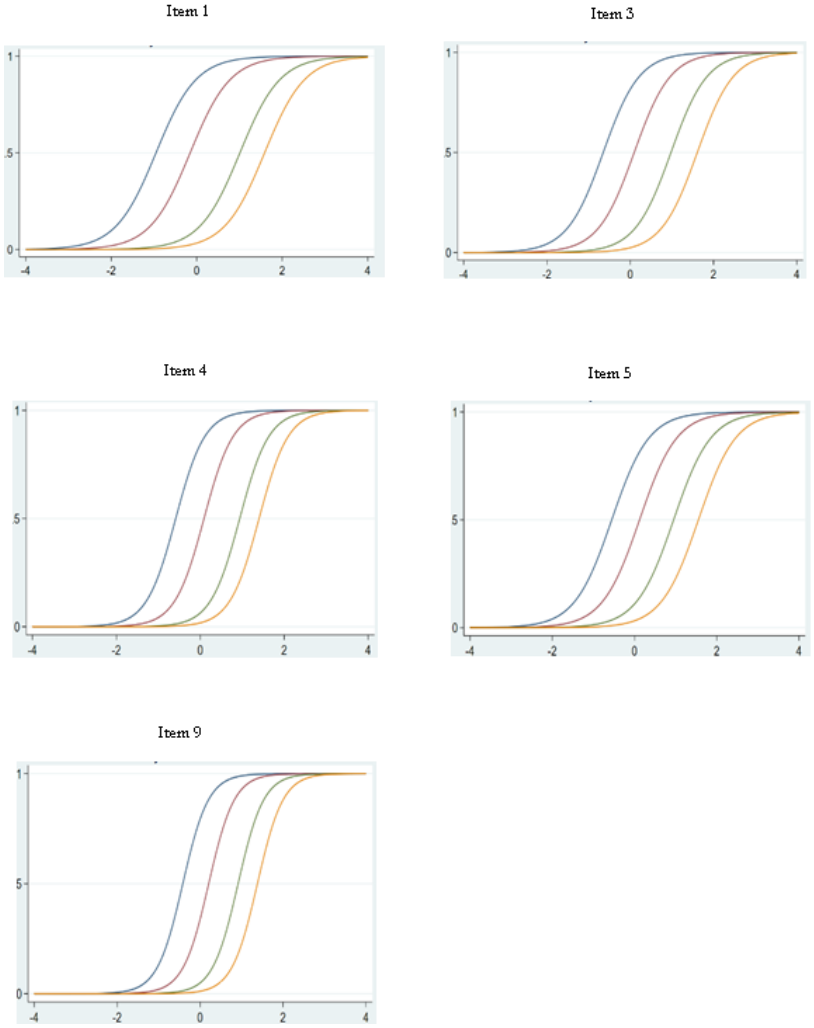


Figure 3
Item characteristics curve for the Motivation dimension of the Turkish State Desperation Scale

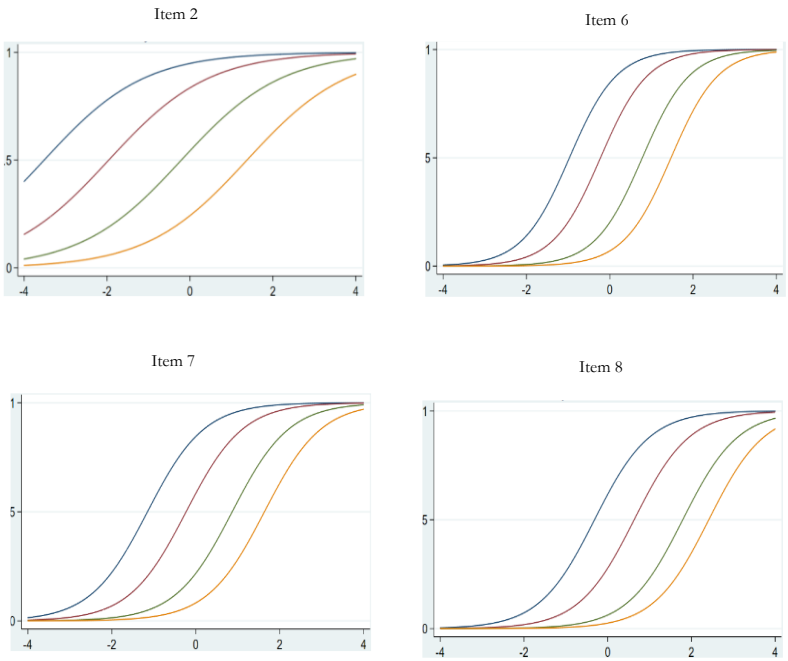


Table 3 demonstrates that all a values are 1.0. Baker (2001) posits that a value exceeding 1.0 is regarded as highly discriminative. The categorization of value ranges is as follows: The following scale is used to classify the values: 0 (none), .01- .34 (very low), .35- .64 (low), .65- 1.34 (moderate), 1.35-1.69 (high), 1.70 and above (very high), and greater than zero (excellent). The Item Response Theory (IRT) framework is widely acknowledged and employed for the examination and conceptualization of item responses. This entity provides valuable resolutions to a diverse range of measurement difficulties. Item Response Theory (IRT) places emphasis on the evaluation of individual items, in contrast to conventional methods that aggregate scores from multiple items (Baker & Kim, 2017). According to Fraley et al. (2000), the application of Item Response Theory (IRT) within the framework of Likert scales offers a methodical comprehension of the choices that are presented to individuals. Hence, the results of the Item Response Theory (IRT) indicated that the items of the Turkish State Desperation Scale exhibited distinguishing characteristics.

Reliability

The JASP program was used to measure the reliability of the scale. Cronbach's α, Mc donald's ω, and Guttman's λ6 reliability values were analyzed. The results showed that the internal consistency and reliability were acceptable at a high level. Table 4 displays the coefficients.

Table 4
Desperation reliability analysis results study 1

	McDonald's ω	Cronbach's α	Guttman's λ6
Study 1	.873	.873	.889
Study 2	.868	.868	.885
Study 3	.883	.880	.893

Study II

After examining its psychometric properties, the second study will investigate the Turkish State Desperation Scale's criterion correlation validity with the Big Five Inventory, depression, anxiety, stress, and mental well-being.

Participants

The participants for Study II were chosen through a convenience sampling technique. A total of 505 individuals participated in the online survey; of these, 422 were women (16.4%) and 83 were men (83.6%), representing diverse provinces of Turkey. The age of the participants in this research is between 18 and 49 years old, representing a broad spectrum of educational backgrounds. The participants comprised a mean of 21.40 years old, accompanied by a standard deviation of 3.56. A considerable percentage of the respondents (n = 233, 46.1%) possessed a tertiary degree, whereas the majority of the participants (*n* = 268, 53.1%) had completed high school. The middle socioeconomic status comprised the majority of participants (*n* = 372, 73.7%). The participant information is detailed in Table 1.

Measures

State Desperation Scale

Hannan and Hackathorn (2022) devised a measurement instrument that exhibits both validity and reliability in assessing levels of helplessness. In the context of the present study, there is a need for the Turkish adaptation of this scale. The fit indices obtained for the original scale are CFI = .94, TLI = .91, RMSEA = .13 and SRMR = .05. The scale comprises two distinct dimensions, namely "emotion" and "motivation," with a total of nine items. The Likert scale employed in this study consists of ten response options, ranging from 0 (indicating a lack of description) to 9 (indicating a high level of description). The minimum score achievable on the scale is 0, while the maximum score achievable on the scale is 81. A greater magnitude on the scale signifies an elevated degree of situational helplessness.

Warwick- Edinburgh Mental Well-being Scale Short Form

The study conducted by Tennant et al. (2007) aimed to assess well-being, a fundamental construct in the field of positive psychology, among a sample of adult individuals. In their study, Demirtaş and Baytemir (2019) made adaptations to the measurement tool for Turkish culture, thereby introducing a measurement tool that is both valid and reliable for assessing mental well-being in adults within the Turkish literature. The Cronbach's alpha reliability coefficient for the scale was computed at.84 and.86, indicating a satisfactory level of reliability. The test results indicated that the fit values were satisfactory, with RMSEA = .065, SRMR = .040, CFI = .99, NFI = .97, GFI = .96, and AGFI = .91. The scale comprises a total of seven items, each representing a single dimension. The Likert scale employed in this study is a 5-point scale, accommodating response options that span from 1 (never) to 5 (always). The minimum score achievable on the scale is 7, while the maximum score achievable on the scale is 35. A significant degree of mental well-being is indicated by a high score on the scale.

Big Five Inventory

The Rammstedt and John (2007) Big Five Inventory assesses five personality traits using a concise version consisting of 10 items. Türküm et al. (2016) conducted a study on the adaptation of Turkish. The rating scale for each item ranges from 1, indicating strong disagreement, to 5, indicating strong agreement. The BFI-10 assessment comprises subscales for "openness," "conscientiousness," "extraversion," "agreeableness," and "neuroticism," each consisting of two items. The five-factor structure of the scale demonstrated fit indices of CFI = .97, GFI = .97, IFI = .97, and SRMR = .041, all of which fall within acceptable thresholds.

Depresyon Anxiety and Stress Scale (DASS-21)

The validity and reliability of a concise scale for assessing depression, anxiety, and stress were established by Lovibond and Lovibond (1995). Yılmaz et al. (2017) adapted the 21-question DASS-21 scale into Turkish. The DASS-21 scale consists of 7 questions that assess the dimensions of "depression," "stress," and "anxiety" individually. The calculated Cronbach's alpha reliability coefficients for the subdimensions of depression, anxiety, and stress are .81, .80, and .75, respectively. The Likert-type scale used in this study consists of four points, with a coding system of 0 indicating "not appropriate for me," 1 indicating "somewhat appropriate for me," 2 indicating "generally appropriate for me," and 3 indicating "completely appropriate for me."

Data Analysis

Examining the associations between the Turkish State Desperation Scale and the Big Five Inventory, depression, anxiety, stress, and mental well-being, correlation analysis was conducted using the SPSS software in Study 2. Subsequently, the interconnections among the concepts were visualized through network analysis utilizing the JASP software.

Results

This section first presents the results of the correlation analysis. Then, the networks between the concepts are visually shown with network analysis.

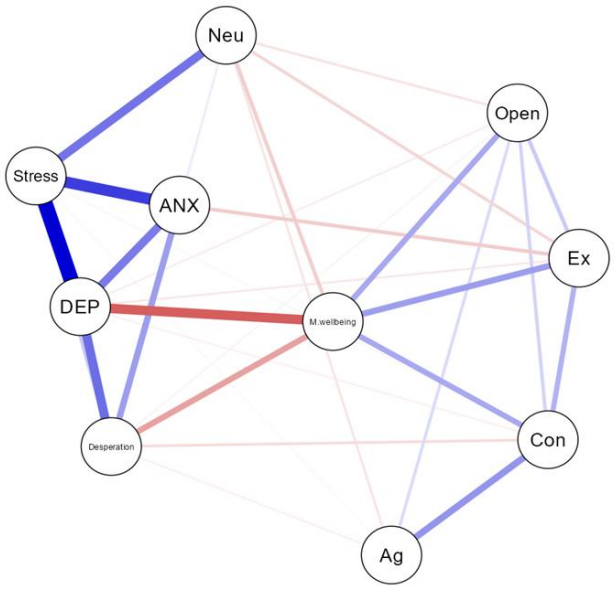
When the relationships in Table 5 are examined, significant positive relationships were found between desperation and depression ($r = .61$, $p < .001$), anxiety ($r = .53$, $p < .001$), stress ($r = .54$, $p < .001$) and neuroticism ($r = .30$, $p < .001$). On the other hand, significant negative correlations were found between desperation and openness ($r = -.21$, $p < .001$), conscientiousness ($r = -.26$, $p < .001$), extraversion ($r = -.24$, $p < .001$), agreeableness ($r = -.13$, $p < .001$) and mental well-being ($r = -.48$, $p < .001$).

Table 5
Relationship of the Desperation with the variables

	Mean	*SD*	Correlation with Desperation		Correlation with Emotion		Correlation with Motivation	
			r	*p*	*r*	*p*	*r*	*p*
Desperation	23.87	8.02	-	-	-	-	-	-
Emotion	12.58	5.21	.898	< .001	-	-	-	-
Motivation	11.28	4.05	.824	< .001	.490	< .001	-	-
Mental wellbeing	23.98	5.54	-.483	< .001	-.559	< .001	-.236	< .001
Depression	7.25	5.87	.619	< .001	.690	< .001	.338	< .001
Anxiety	8.10	5.52	.534	< .001	.561	< .001	.336	< .001
Stress	8.67	5.62	.547	< .001	.565	< .001	.354	< .001
Big five personality traits								
Openness	7.09	1.69	-.214	< .001	-.265	< .001	-.081	.069
Conscientiousness	7.39	1.73	-.263	< .001	-.278	< .001	-.162	< .001
Extraversion	6.82	1.99	-.245	< .001	-.298	< .001	-.101	< .05
Agreeableness	7.99	1.60	-.139	< .001	-.136	< .001	-.100	< .05
Neuroticism	6.33	1.77	.308	< .001	.344	< .001	.167	< .001

Emotion, which is the sub-dimension of state desperation, is positively correlated with depression (r = .69, p < .001), anxiety (r = .56, p < .001), stress (r = .56, p < .001) and neuroticism (r = . 34, p < .001), whereas the concept of desperation is negatively correlated with openness (r = -. 26, p < .001), conscientiousness (r = -.27, p < .001), extraversion (r = -.29, p < .001), agreeableness (r = -.13, p < .001) and mental well-being (r = -.55, p < .001). The other sub-dimension, motivation, was positively correlated with depression (r = .33, p < .001), anxiety (r = .33, p < .001), stress (r = .35, p < .001) and neuroticism (r = . 16, p < .001), but negatively correlated with conscientiousness (r = -.16, p < .001), extraversion (r = -.10, p < .05), agreeableness (r = -.10, p < .05) and mental well-being (r = -.23, p < .001). The relationship network between the concepts is shown in Figure 4.

Figure 4
Network analysis for desperation (Blue lines represent positive correlations and red lines represent negative correlations. Note. DEP: Depression; Anx: Anxiety; Open: Openness; Con: Conscientiousness; Ex: Extraversion; Ag: Agreeableness; Neu: Neuroticism; M.well-being: mental well being.



Study III

The objective of Study III was to examine the associations between state desperation and indicators of intolerance of uncertainty, entrapment, and resilience. Additionally, the study aimed to assess these variables within a theoretical framework. At this juncture, the correlation between the variables will initially be unveiled, followed by the implementation of structural equation modeling for analysis. The modeling will test the following hypotheses:

H1. Intolerance of uncertainty has a mediating role between desperation and resilience.

H2. Entrapment has a mediating role between desperation and resilience.

H3. There is a serial mediation role of intolerance of uncertainty and entrapment between desperation and resilience.

Participants

Study III employed convenience sampling to select participants. A total of 443 participants, consisting of 355 women (80.1%) and 88 men (19.9%) from different provinces in Turkey, were surveyed online. The study included participants with diverse educational backgrounds, spanning from 18 to 45 years of age. The participants had an average age of 22.02 years, with a standard deviation of 4.56 hours. A considerable percentage of the participants possessed a higher education at the university level (N = 192, 43.3%), whereas the majority of the participants had finished high school (N = 247, 55.8%). The majority of participants (N = 312, 70.4%) had a moderate socio-economic status. Table 1 displays details regarding the participants.

Measures

Brief Psychological Resilience Scale

The psychological resilience levels of adult individuals were measured using a scale developed by Smith et al. (2008). Doğan (2015) conducted a study on the adaptation of the Turkish language for use by an adult sample. The internal consistency coefficient of the scale was determined to be.83, indicating that the scale demonstrated reliability. Additionally, the fit indices were deemed acceptable, with values of NFI = .99, NNFI = .99, CFI = .99, IFI = .99, RFI = .97, GFI = .99, AGFI = .96, RMSEA = .05, and SRMR = .03. The 6-item scale possesses a unidimensional nature. The response choices are presented on a 5-point Likert scale, where 1 represents "not at all appropriate" and 5 represents "completely appropriate." The individual's elevated scores on the scale suggest a notable level of psychological resilience, denoting their capacity for self-recovery following challenging circumstances.

Entrapment Scale

The measurement of entrapment in adults was conducted using a scale developed by De Beurs et al. (2020). Türk et al. (2024) conducted a study on the adaptation of Turkish. The scale demonstrated a Cronbach's alpha internal consistency reliability coefficient of.88, along with fit values of RMSEA = .08, CFI = .99, IFI = .99, GFI = .99, NFI = .99, TLI = .98, RFI = .97, and SRMR = .010. These values indicate that the scale's internal consistency and reliability are acceptable. The scale comprises four items and is characterized by a unidimensional structure. The scale's responses are presented in a 5-point Likert format, ranging from "0 (not at all like me)" to "4 (extremely like me)." The minimum and maximum scores achievable on the scale are 0 and 16 points, respectively. An upward trend in scores is indicative of a corresponding increase in the sensation of being trapped.

Intolerance of Uncertainty Scale (IUS)

The instrument for measuring intolerance of uncertainty levels in an adult sample was developed by Carleton et al. (2007). Sarıçam et al. (2014) modified the aforementioned measurement instrument to suit the Turkish cultural context, thereby presenting a measurement tool that is both valid and reliable for assessing intolerance of uncertainty among adults, as documented in the Turkish literature. The measurement instrument comprises two distinct dimensions, namely "prospective anxiety" and "inhibitory anxiety," and encompasses a total of twelve items. The scale utilized in this study is a 5-point Likert-type scale, wherein respondents are presented with response options ranging from 1 (indicating complete unsuitability) to 5 (indicating complete suitability). The minimum score achievable on the scale is 12, while the maximum score achievable on the scale is 60. A significant rating on the scale indicates a pronounced degree of intolerance towards uncertainty. The reliability coefficient for the entire scale, as determined by Cronbach's alpha, is.88. The Cronbach's alpha reliability coefficient obtained for the subdimension of "prospective anxiety" was.84, while for the sub-dimension of "inhibitory anxiety," it was .77. The fit values were acceptable as $\chi^2 = 147.20$, df = 48, RMSEA = .073, CFI = .95, IFI = .95, GFI = .94, and SRMR = .046.

Data Analysis

Study III aims to reveal the relationship between the concepts of desperation, resilience, intolerance of uncertainty and entrapment. With the collected data, normality analysis, descriptive statistics, reliability analysis and correlation analysis were performed using SPSS, JASP and AMOS programs. Then, Structural Equation Modeling (SEM) was conducted. SEM is stated as a very powerful quantitative analysis method since it offers the opportunity to make decisions according to more than one parameter (Kline, 2011). In line with Kline's (2011) recommendations, two-stage SEM was used in the study. In the first stage, it was tested whether the measurement model, which deals with the relationship between indicator variables and latent variables and the relationships between these latent variables, was verified. After the measurement model was verified, the hypothetical structural model was tested. In order to evaluate the results of SEM, the goodness of fit indices recommended by Hu and Bentler (1999) were considered. In this context, in addition to chi-square (χ^2) and degrees of freedom, GFI, RFI, CFI, NFI, IFI, TLI, SRMR and RMSEA values were calculated. As critical values, the ratio of $\chi 2$ to degrees of freedom should be less than 5, GFI, RFI, CFI, NFI, IFI and TLI values should be higher than .90, and SRMR and RMSEA values should be lower than .08 (Hu & Bentler 1999; Tabachnick & Fidell, 2001). On the other hand, AIC and ECVI values were examined in addition to the chi-square difference test in order to select the best model from more than one model in SEM. Whichever model has smaller AIC and ECVI values is accepted as the best model (Akaike 1987; Browne and Cudeck 1993).

The item parceling method was employed in SEM due to the unidimensional nature of entrapment and resilience. According to Nasser-Abu Alhija and Wisenbaker (2006), the utilization of the parceling method in the context of personality traits serves to decrease the quantity of observed variables, enhance reliability, and facilitate the manifestation of a normal distribution in the scales. Parcellation was employed to establish two distinct dimensions pertaining to entrapment and resilience. Furthermore, the inclusion of gender and age control variables was implemented to bolster and enhance the research.

In this research, alongside structural equation modeling (SEM), bootstrapping was employed to enhance the robustness of the findings and to offer supplementary support for the importance of mediation (Preacher & Hayes, 2008). The

sample size was augmented to 10,000 using bootstrapping, and confidence intervals (C.I.I.) were generated using the bootstrapping value. The lack of a zero point within the confidence intervals indicates that the mediation being tested is statistically significant.

Results

This section first presents the results of the correlation analysis. Then, structural equation modeling is explained.

Table 6
Correlation and descriptive statistics, including the arithmetic mean, standard deviation, skewness, and kurtosis values

	N	Mean	*SD*	Skewness	Kurtosis	McDonald's ω	Cronbach's α	Guttman's λ6	1	2	3
1-Desperation	443	23.92	8.16	.063	-.791	.883	.880	.893	-		
2-Resilience	443	18.07	5.01	-.043	.159	.812	.814	.813	-.35**	-	
3-Entrapment	443	7.16	4.70	.224	-.836	.904	.902	.893	.69**	-.52**	-
4-Intolerance of uncertainty	443	39.57	10.0	-.168	-.135	.913	.911	.917	.45**	-.38**	.49**

**p < .001; *p < .05

Table 6 displays the correlation and descriptive statistics, including the arithmetic mean, standard deviation, skewness, and kurtosis values, for the variables. Upon examination of Table 6, it is evident that the skewness values (ranging from -.168 to .224) and kurtosis values (ranging from -.836 to .159) of the variables fall within the normality criteria of ±2 for skewness and ±7 for kurtosis, as specified by Finney and DiStefano (2006).

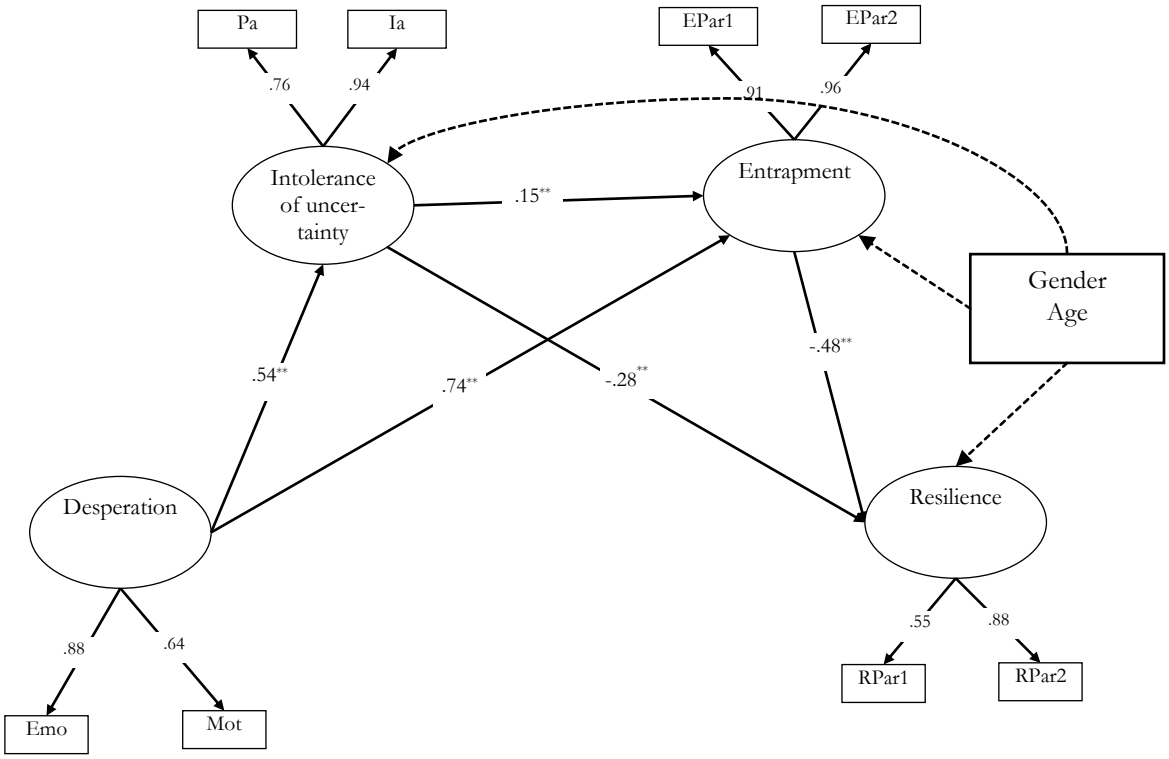
Upon analysis of the relationships presented in Table 6, it becomes evident that there exist statistically significant positive associations between desperation and entrapment (r = .69, p <.001), desperation and intolerance of uncertainty (r = .45, p < .001), as well as entrapment and intolerance of uncertainty (r = .49, p < .001). Conversely, a noteworthy inverse correlation exists between resilience and desperation (r = -.35, p < .001), resilience and entrapment (r = -.52, p < .001), and resilience and intolerance of uncertainty (r = -.38, p < .001).

Once the significance of the relationships between the concepts was established, the measurement model was initiated. The measurement model comprises four latent variables, namely desperation, resilience, intolerance of uncertainty, and entrapment, together with eight observed variables that provide support for each of these variables. Based on the obtained results, the suitability of the fit values is indicated by the following: x2/SD = 3.923, GFI = .959, CFI = .967, NFI = .956, TLI = .954, RFI = .939, IFI = .967, SRMR = .04, RMSA = .07. The fit values can be considered satisfactory. It is widely acknowledged that the factor loadings exhibit a range of values from .60 to .85. Thus, it can be asserted that the quantifiable values correspond to the underlying variables.

The initial focus of the study was on the structural model, specifically examining the role of intolerance of uncertainty and entrapment as partial mediators in the relationship between desperation and resilience. The partial mediation model examines the direct relationship between desperation and resilience, as well as the use of intolerance of uncertainty and entrapment to predict the relationship between desperation and resilience. The model that partially mediates intolerance of uncertainty and entrapment was determined to be statistically insignificant. Consequently, a comprehensive mediation model was examined. The complete mediation model does not establish a direct causal relationship between desperation and resilience or the mediating role of intolerance of uncertainty and entrapment. The fit values of the test results (χ^2/SD: 2.52, GFI = .974, CFI = .984, NFI = .974, TLI = .971, RFI = .953, IFI = .984, SRMR= .03, RMSA = .05) satisfy the acceptable criteria.

In relation to the model examining the role of intolerance of uncertainty and entrapment as mediators, the full mediator model was chosen due to the lack of significance of the partial mediator and the significant and compatible nature of the full mediator model. The preferred model among the results indicates that intolerance of uncertainty and entrapment play a sequential and comprehensive mediating role in the relationship between desperation and resilience levels. Figure 5 provides the path coefficients for this model.

Figure 5
Standardized factor loading for the fully mediated structural model



Note. $N = 443$; $^{**}p < .001$; *EPar* parcels of entrapment; *Pa*: prospective anxiety; *Ia*: inhibitory anxiety; *Emo*: emotion: *Mot*: motivation; *LPar* parcels of loneliness; *RPar* parcels of resilience

Bootstrapping was performed to support and strengthen the research. As a result, all direct path coefficients are significant. The results are given in Table 7.

All these results suggest that intolerance of uncertainty and entrapment play a full mediating role between desperation and resilience. Moreover, there is a serial mediation between desperation and resilience by intolerance of uncertainty and entrapment.

Table 7
Direct path coefficients of the bootstrapping.

Path	Coefficient	95% CI	
		LL	UL
State Desperation → Intolerance of uncertainty → Resilience	-.326	-.431	-.231
State Desperation → Entrapment → Resilience	-.529	-.618	-.441
State Desperation → Intolerance of uncertainty → Entrapment → Resilience	-.541	-.633	-.443

Note. CI confidence interval, LL lower limit, UL upper limit

Discussion

Every single person has the potential to experience state desperation. The occurrence of challenging circumstances such as depression, anxiety, and stress may take place in the event that the necessary coping mechanisms are not effective. A negative prediction of mental well-being is made by it. Desperation was discovered to be associated with intolerance of uncertainty and entrapment, and it indirectly predicted resilience. This scale has the potential to make a significant contribution in the context of identifying the level of desperation and taking action in preventive and interventionist scenarios. Since this is the case, the purpose of the study is to present a scale of state desperation for the culture of Turkey.

The first thing that this research has discovered is that the Turkish version of State Desperation Scale is of high reliability and validity from a psychometric standpoint. With this discovery, the first research question that was posed during the initial phase of the study is answered. The results of the study indicate that the two-factor structure of the State Desperation Scale is a good fit. Furthermore, the findings indicate that all the different measures, such as Cronbach's

alpha (α), McDonald's omega (ω), and Guttmann lambda (λ6), are adequate in terms of reliability analysis. It is possible to assert that the reliability of these findings is at a level that is satisfactory in the existing body of research (Karagöz, 2017). Furthermore, in this study, the item-centered correlation coefficient (ICC) was utilized to investigate the relationships between the responses of the participants to the items. According to the findings of the ICA, each and every one of the scale items was classified as being of a very high level. According to Baker (2001), in order for the items to be discriminative, the α value should be greater than 1.0, and the value ranges of the items were classified in the following categories: 0 (none), .01- .34 (very low), .35- .64 (low), .65-.1.34 (moderate), 1.35-1.69 (high), 1.70 and above (very high), and greater than zero (perfect). In this particular setting, it was determined that item 2 of the State Desperation Scale was discriminatory to a moderate degree, that items 7 and 8 were discriminatory to a high degree, and that the remaining items were discriminatory to an extremely high degree altogether. In light of this, it can be concluded that the items on the State Desperation Scale possess a high level of discrimination. In Smalldon and Moffat's (1973) study, the term "discriminating power" refers to the probability of being able to differentiate between two samples that were randomly selected from the population of interest.

In the second study, the scale-link validity of the State Desperation Scale was investigated. The results showed that there were significant relationships with neuroticism, depression, anxiety, stress, and neuroticism, as well as with openness, conscientiousness, extraversion, agreeableness, and mental well-being. The validity of the scale-related relationship is demonstrated by the identification of these significant relationships. When the research literature is analyzed, it is discovered that there are significant connections between desperation and depression (Garlow et al., 2008), anxiety (Mngoma et al., 2021), and mental well-being (Jager & Steyn, 2023). Consequently, the validity of scale-related measures is supported. It is possible that this will cause people who are in a state of desperation to feel isolated and entrenched in their problems. Individuals who are able to effectively manage this circumstance may experience improved well-being; however, those who struggle to do so may be more likely to experience negative emotions such as depression, anxiety, stress, and neuroticism.

When looking at the hypotheses that were tested in Study III, the first hypothesis investigated the role that intolerance of uncertainty plays as a mediator between desperation and resilience. The hypothesis was validated through the utilization of the intervention of intolerance for uncertainty. The concept of hopelessness was used to explain the concept of desperation (Steinbock, 2007). In a study conducted by Özdemir et al. in 2021, it was discovered that individuals who are hopeless are unable to tolerate uncertainty. On the other hand, according to Wang et al. (2023), people who have low psychological resilience are those who have issues with intolerance of uncertainty. It is possible to interpret this circumstance as a decrease in the level of patience that individuals have against their expectations in the event that they are experiencing despair, which ultimately results in a psychological weakening.

Another hypothesis examined the mediating role of entrapment between desperation and resilience. The hypothesis was confirmed with the mediation of entrapment. Blum (1996) asserts that people experience desperation as a form of entrapment. Witmer (2021) found a significant relationship between shoulderlessness and entrapment. There is also a significant correlation between entrapment and resilience, as stated by Zhang et al. (2023). As a result of this, individuals who are experiencing desperation may feel trapped by their inability to do anything, which can have a negative impact on their psychological resilience.

The primary and ultimate hypothesis was to investigate the role that intolerance of uncertainty and entrapment play in the process of serial mediation between desperation and resilience among individuals. According to the findings of the analysis, the hypothesis was established. There are studies that have been conducted between desperation and intolerance of uncertainty (Özdemir et al., 2021), entrapment (Witmer, 2021), and resilience (Nieto et al., 2023). Despite the fact that there is no direct research on desperation in the literature, numerous studies have been conducted. On the other hand, there have been reports of the relationships between resilience and entrapment (Zhang et al., 2023) and intolerance of uncertainty (Wang et al., 2023) in the field of psychology. Moreover, the research is supported by the existing body of literature. One could say that people who are going through a period of desperation may occasionally find themselves in a state of time perception and a future that is uncertain. Furthermore, a person who is experiencing uncertainty may find themselves in a state of entrapment if they push the limits of their tolerance. Consequently, if all of these things occur, it is possible that their psychological resilience will be negatively affected.

Implications

The development of the State Desperation Scale in this study has effectively addressed a significant gap in the existing literature, thereby facilitating the examination of a contemporary issue. The Turkish sample has provided a more comprehensive analysis of the psychometric properties of the State Desperation Scale. In the context of this research, the efficacy of the items on the scale was assessed through the utilization of item response theory (IRT) in conjunction with confirmatory factor analysis (CFA). Furthermore, numerous reliability assessments were carried out. Hence, it can be posited that this scale, possessing both validity and reliability, holds potential for frequent utilization in novel research endeavors. The examination of state desperation through various conceptual frameworks has the potential to yield numerous advantages for psychiatrists, psychology professionals, and therapists in their situational assessments. Ul-

timately, it is possible to develop programs that can promptly identify individuals who are experiencing state desperation and help them maintain their psychological well-being amidst the overall chaos of life.

Limitations and future research

It is important to consider certain limitations when interpreting the results of this study. One primary constraint of the research lies in the utilization of self-report scales for data collection. Even when considering voluntary participation as a foundation, these scales have the potential to exhibit social desirability biases. Hence, it may be advantageous to employ alternative data collection methodologies in forthcoming research endeavors. One additional constraint pertains to the challenge of establishing causality, which arises from the cross-sectional nature of the research design. Future studies can employ the findings of this study to conduct longitudinal or experimental studies. One limitation of this study is that, while multiple reliability analyses were performed, test-retest reliability was not computed. In future studies, the test-retest reliability coefficient of the scale can be determined within the context of temporal reliability. The data were exclusively collected from the Turkish sample. Given the universality of desperaiton, it is recommended that future research endeavors encompass the collection of data from diverse cultural contexts. Additionally, the fact that there are more females than males limits the sample. These circumstances should be considered when interpreting the research's findings.

Conclusion

Every person may experience desperation at some point in their life, and the State Desperation Scale has been analyzed in three stages using various examples. The initial phase of the study provided evidence supporting the validity and reliability of the State Desperation Scale as a measurement instrument. In this study, the criterion correlation validity and predictive validity of the scale were established by comparing it to established and reliable scales that have been previously accepted. The study ultimately identified the significant mediating role of intolerance of uncertainty and entrapment in the relationship between desperation and resilience. Psychological resilience was predicted by desperation, which was influenced by an intolerance of uncertainty and entrapment.

Complementary information

Conflict of interest.- The authors declare no conflict of interest.
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