

## Examination of Mental Well-Being Levels in Emerging Adulthood in Terms of Grit and Cognitive Flexibility Beliren Yetişkinlikte Mental İyi Oluş Düzeylerinin Azim ve Bilişsel Esneklik Açısından İncelenmesi

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**Abstract:** The aim of this study is to examine the levels of mental well-being in emerging adulthood in terms of grit and cognitive flexibility. In the study, it was examined whether grit and cognitive flexibility predict mental well-being levels. A correlational survey model was used in the study. The data of the study were collected with "Warwick-Edinburgh Mental Well-Being Scale", "Cognitive Flexibility Inventory" and "Brief Grit Scale". In the analysis of the data, groups t-test and one-way analysis of variance were performed. Pearson product-moment correlation coefficient was calculated to determine the relationship between the variables. Multiple linear regression analysis was used to determine the extent to which the variables predicted mental well-being. According to the findings of the study, it was observed that there was a positive and moderately significant relationship between students' mental well-being levels and their levels of grit and cognitive flexibility. It was also found that grit and cognitive flexibility predicted mental well-being. It explains 33.5% of the total variance of grit and cognitive flexibility, which are predictor variables. Finally, the findings obtained in the study were discussed in line with the relevant literature and suggestions for both study and practice areas were presented.

**Keywords:** Mental well-being, cognitive flexibility, grit, emerging adulthood

**Öz:** Bu araştırmanın amacı, beliren yetişkinlikte mental iyi oluş düzeylerinin azim ve bilişsel esneklikleri açısından incelenmesidir. Araştırmada azim ve bilişsel esnekliğin mental iyi oluş düzeylerini yordayıp yordamadığı incelenmiştir. Araştırmada ilişkisel tarama modeli kullanılmıştır. Araştırmanın verileri "Warwick-Edinburgh Mental İyi Oluş Ölçeği", "Bilişsel Esneklik Envanteri" ve "Kısa Azim Ölçeği" ile toplanmıştır. Verilerin analizinde, gruplar t-testi ile tek yönlü varyans analizi yapılmıştır. Değişkenler arasındaki ilişkiyi saptamak için pearson momentler çarpımı korelasyon katsayısı hesaplanmıştır. Değişkenlerin mental iyi oluşu ne derece yordadığını belirlemek için ise çoklu doğrusal regresyon analizi kullanılmıştır. Araştırma sonucunda elde edilen bulgulara göre öğrencilerin mental iyi oluş düzeyleri ile azim ve bilişsel esneklik düzeyleri arasında pozitif yönde orta düzeyde anlamlı bir ilişki olduğu görülmüştür. Ayrıca azim ve bilişsel esnekliğin mental iyi oluşu yordadığı görülmüştür. Yordayıcı değişkenler olan azim ve bilişsel esnekliğin toplam varyansının %33,5'ini açıklamaktadır. Son olarak araştırmada elde edilen bulgular ilgili alanyazın doğrultusunda tartışılarak hem araştırma hem de uygulama alanlarına yönelik öneriler sunulmuştur.

**Anahtar Kelimeler:** Mental iyi oluş, bilişsel esneklik, azim, beliren yetişkinlik

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### Introduction

Human existence undergoes various developmental phases, encompassing prenatal, infancy, childhood, adolescence, adulthood, and old age (Doğan & Cebioğlu, 2011). Within this continuum, emerging adulthood, as delineated by Arnett (2000), emerges as a distinctive stage. Characterized by the initiation of adult life pursuits, the cultivation of daily life competencies, and heightened self-awareness, emerging adulthood epitomizes a period where individuals concentrate on self-discovery (Arnett, 2000). Arnett (2000) underscores that, within industrialized societies, the age group of 18-25, predominantly comprised of university students in middle-class nations, typifies the demographic experiencing emerging adulthood. Certain studies propose that the span of emerging adulthood extends from 18 to 29 years old (Eroğlu & Gündoğdu, 2021). The challenges inherent in emerging adulthood, considered the onset of mature responsibilities, can exert adverse effects on individuals' psychological well-being, familial dynamics, occupational endeavors, and educational pursuits (Arnett, 2005). This developmental juncture often coincides with university enrollment, marking a period when numerous students grapple with the complexities of establishing new relationships, meeting academic expectations, and navigating diverse cultural landscapes away from home (Arnett, 2000; Benn et al., 2005). The initial foray

into university life is recognized as a stress-laden event (Dyson & Renk, 2006). The university years, deemed one of the most intricate phases of personal development, align with the concluding stages of adolescence—a biologically and socially transformative transitional period (Özdel et al., 2002). Cleary et al. (2011) posit that university students confront mental health challenges due to financial constraints, separation from family, the transition to university life, and significant life changes. Each life alteration instigates an adaptation process. Throughout the adaptation to university life, individuals navigate multifaceted adjustments across personal, academic, and social dimensions (Baker & Siryk, 1984).

It is asserted that the adjustment to university predominantly involves the capacity to harness one's inherent potential and the nexus between success and academic acquisition (Anderson, 1994). Consequently, during this phase, university students are anticipated to undertake varied developmental tasks pertaining to the cultivation of a positive identity, the establishment of intimate connections, and the acclimatization to both social and academic spheres (Küçükarslan & Gizir, 2014). Potential challenges arising in emerging adulthood, heralded as the commencement of adulthood, can exert adverse effects on an individual's psychological well-being, familial relationships, professional engagement, economic pursuits, and educational standing

(Arnett, 2005). Within this framework, well-being emerges as a pivotal indicator for attaining both social and personal health (Ryff & Singer, 2008). Defined as a holistic concept encompassing overall happiness, life satisfaction, and positive mental health (Dursun, 2012), well-being and health are characterized as a continuous process wherein individuals orchestrate their lives to lead a qualitatively healthier existence. Notably, well-being is construed not merely as the absence of ailment but as the individual's capability to maintain a state of well-being even when confronted with discomfort symptoms (Memnun, 2006). Broadly speaking, the notion of well-being encapsulates an individual's realization of their own potential and life goals, alongside the significance of their relationship with the environment (Ryff & Keyes, 1995). Mental well-being is elucidated as a multifaceted construct encompassing psychological well-being and subjective well-being (Yılmaz, 2022). The World Health Organization (2004) delineates mental well-being as the ability to surmount life stressors, contribute to society commensurate with one's capacities, and possess awareness of one's abilities. Ryff (1989) contends that mental well-being incorporates facets such as self-acceptance, purpose in life, autonomy, environmental mastery, personal growth, and the cultivation of positive interpersonal bonds. Individuals exhibiting elevated mental health are characterized by heightened efficiency, creativity, robust interpersonal relationships, fortified immune systems, and extended longevity (Keldal, 2015). Conversely, another study indicates that individuals with heightened levels of mental well-being exhibit exceptional productivity and resilience, enjoy prolonged lifespans, excel in professional domains, and engage positively in interpersonal interactions (Lyubomirsky et al., 2005).

The enhancement of an individual's well-being is contingent upon fostering belief in one's abilities and self-confidence, thereby fostering a sense of peace, happiness, and the capacity to confront challenges in a resilient manner (Ağaoğlu, 2012). Recent advancements in the realm of social sciences underscore the importance of delving into factors influencing individuals' psychological well-being (Uyar, 2019). The escalating volume of studies dedicated to mental well-being highlights the comprehensive exploration of individuals' strengths alongside their vulnerabilities (Kararımak, 2006). Research on subjective well-being in the literature shows that there is a relationship between subjective well-being and different variables that are gender and age (Eryılmaz & Ercan, 2011), cognitive flexibility, mindfulness, hope (İmiroğlu et al., 2021), personality traits (Diener & Lucas, 1999), happiness (Asıcı & İkiz, 2015), academic self-efficacy, grit, intrinsic motivation and psychological resilience (Yıldız & Kardaş, 2021), patience (Doğan, 2017), and self-esteem (Doğan & Eryılmaz, 2013).

Cognitive flexibility holds significant prominence in university life, facilitating young individuals' swift adaptation to their academic environment, fostering a contented existence, and effectively managing stressors (Özbay et al., 2012). The expeditious and facile mental adjustment of individuals to encountered changes is posited to contribute to their overall happiness and well-being. Consequently, the concept of cognitive flexibility, characterized by adept responses to novel stimuli and situations, assumes a central role in this context (Gündüz, 2013). Broadly defined as the ability to generate options, cognitive flexibility emerges as a crucial trait for cognitively adapting to dynamic situations, navigating the challenges posed by unstable conditions, and

effectively responding to changing circumstances (Pierce et al., 2006). Deak (2003) articulates cognitive flexibility as the capability to adapt to unforeseen and unfamiliar events, adeptly synthesizing concepts, and modifying established habits and knowledge to formulate new syntheses and action plans. Studies indicate a positive correlation between cognitive flexibility and various factors, including cognitive skills, belief in social competence, language proficiency, problem-solving aptitude, happiness, tolerance, and self-efficacy (Asıcı & İkiz, 2015; Çelikkaleli, 2014).

Henceforth, it can be asserted that cognitive flexibility holds pivotal significance in augmenting an individual's well-being and safeguarding mental health (Özhan & Boyacı, 2021). Existing literature underscores a correlation between students' well-being and academic accomplishments, emphasizing the influential roles played by both cognitive and non-cognitive factors in achieving success (Hoerr, 2012; Waters, 2011). Studies reveal a noteworthy association between the concept of well-being and the autonomous exertion of determined efforts to attain specific goals (Deci & Ryan, 2002; Sheldon, 2004). When delving into students' academic achievements, the personality trait of grit in achievement emerges prominently. Grit is essentially characterized as the fervor and determination to realize enduring objectives (Duckworth et al., 2007). Students endowed with grit can transform their long-term goals into life pursuits by surmounting adversities to actualize these aspirations (Singh & Jha, 2008). Beyond its impact on success, the study indicates that individuals with elevated levels of grit exhibit heightened happiness, increased positive emotions, greater optimism regarding future endeavors, and a heightened level of hope, with grit functioning as a protective character trait against depression (Proyer et al., 2014; Singh et al., 2008).

Sarikan (2023) examined the relationship between emotional intelligence, cognitive flexibility and psychological well-being levels in a study. As a result of the study, it was seen that there was a moderate relationship between cognitive flexibility and psychological well-being levels, and a moderate relationship between emotional intelligence and psychological well-being levels. Yanar et al. (2023) concluded that mental well-being is a predictor of academic self-efficacy.

In a study conducted by Yıldız (2019) the primary objective was to investigate the interplay between academic self-efficacy, psychological resilience, intrinsic motivation, and grit in relation to well-being. The study also sought to delineate the extent of influence exerted by these variables on overall well-being. Study findings revealed a statistically significant positive correlation between psychological resilience, grit, self-efficacy, motivation, and well-being. While existing literature has explored individual studies on the levels of grit, cognitive flexibility, and mental well-being—each being variables in this study—a distinctive aspect lies in the absence of research that concurrently incorporates these three variables. Beyond the capacity to find effective solutions when confronted with challenges, this study assumes significance in fostering students' broader and alternative thinking, thereby enhancing efficiency, creativity, and the cultivation of improved interpersonal relationships.

### **Purpose of the Study**

The present study endeavors to scrutinize the intricate interplay among mental well-being, grit, and cognitive flexibility within the demographic of emerging adulthood university students. The primary objective is to discern the

existence of a significant relationship between the levels of grit, cognitive flexibility, and mental well-being among these university students.

Additionally, the study seeks to ascertain whether mental well-being levels in emerging adulthood university students exhibit significant variances based on factors such as academic grade, gender, academic achievement, and perceived socioeconomic status. Furthermore, the study aims to explore the predictive capacity of grit and cognitive flexibility levels in emerging adulthood university students in relation to their mental well-being levels.

In this context, the following hypotheses were developed:

H1: Do the mental well-being levels of emerging adulthood university students differ significantly according to their grade, gender, academic achievement and perceived socioeconomic status?

H2: Is there a relationship between mental well-being, grit and cognitive flexibility of emerging adulthood university students?

H3: Do grit and cognitive flexibility levels of emerging adulthood university students predict their mental well-being levels?

## Method

### Research Model

Utilizing a relational survey model, this study seeks to investigate the correlation between gratitude and hope levels and the levels of depression, anxiety, and stress experienced by university students in emerging adulthood. A relational survey model employed in this study aims to elucidate the existence and extent of the correlation or change between two or more variables (Karasar, 2023).

### Study Group

The study was conducted among students enrolled in various universities across Turkey, forming the study group. Data collection took place during the 2022-2023 academic year, encompassing students from diverse universities, departments, and classes. Participants in the study group were aged between 18 and 24 years, with a total of 493 individuals contributing to the study. Table 1 provides detailed demographic information concerning the study group.

**Table 1.** Descriptive statistical findings of the study group

Factor	Variable	n	%
Gender	Female	349	70.8
	Male	144	29.2
Age	18	40	8,1
	19	53	10,7
	20	102	20,6
	21	123	24,9
	22	96	19,4
	23	42	8,6
Class	24	38	7,7
	1	100	20.3
	2	174	35.3
	3	120	24.3
Grade point average	4	99	20.1
	0-2.49	66	13.4
	2.50-2.99	205	41.6
	3.00-3.49	180	36.5
Socio-economic level	3.50-4.00	42	8.5
	Low	51	10.3
	Middle	418	84.8
	High	24	4.9

## Data Collection Tools

In the study, the assessment of mental well-being scores relied on the "Warwick-Edinburgh Mental Well-Being Scale." Grit scores were determined through the application of the "Short Grit Scale," and cognitive flexibility scores were gauged using the same instrument, the "Cognitive Flexibility Inventory". The study also utilized the "Personal Information Form" to examine students' gender, age, university, grade, department, undergraduate GPA, and perceived socio-economic status.

### Personal Information Form

The personal information form to be included in the study includes information on the participant's gender, age, university attended, department, class, perceived socio-economic level and undergraduate GPA.

### Warwick-Edinburgh Mental Well-Being Scale

The scale, initially developed by Tennant et al. (2007) and later adapted into Turkish by Keldal (2015), comprises 14 items and follows a 5-point Likert scale. Higher scores on this scale indicate a heightened level of mental well-being, with scores ranging from 14 to 70. During the validity studies, participants' ages spanned from 16 to 70 years. Both Confirmatory Factor Analysis (CFA) and Exploratory Factor Analysis (EFA) were employed to establish the construct validity of the scale. The data gathered from the Turkish sample affirmed the single-factor structure of the scale. The construct validity study revealed that the scale items converged into a single dimension, explaining 51% of the total variance. The calculated internal consistency coefficient of the scale was found to be .89, indicating a high level of reliability. In the present study, the Cronbach's Alpha internal consistency reliability coefficient for the scale was independently calculated and yielded a value of .90. These findings collectively suggest that the scale is a reliable and valid measurement tool for assessing mental well-being, as concluded by Keldal in 2015.

### Short Grit Scale

The scale, originally developed by Duckworth and Quinn (2009), underwent adaptation into Turkish by Haktanır et al. The original version comprises 8 items with a 5-point Likert scale and two sub-dimensions, namely consistency of interest and persistence in effort. The adapted Turkish version consists of 6 items, where the maximum score indicates extremely high resilience (5), and the minimum score represents no resilience at all (1). The adaptation study targeted university students. In its original English form, the scale demonstrated Cronbach alpha internal consistency coefficients ranging from .73 to .83. Confirmatory Factor Analysis (CFA) results for the 2-dimensional model of the original scale revealed fit index values, including  $\chi^2$  (19, N = 1,554) = 188.52,  $p < .001$ ; RMSEA = .076 (90%CI = .066-.086), CFI = .96. The scale emphasizes that higher scores indicate a greater level of grit. Upon conducting confirmatory factor analysis for the adapted Turkish version, the fit indices were calculated as ( $\chi^2$ /sd= 1.33, SRMR = .04, GFI = .98, CFI = .99, TLI = .99, RMSEA = .04,) respectively. The scale exhibited a strong fit in a unidimensional structure, with a Cronbach alpha internal consistency coefficient of .71 in this study.

### Cognitive Flexibility Inventory

The cognitive flexibility scale, developed by Dennis and Wal (2010) and validated by Sapmaz and Doğan (2013), consists of 20 items scored on a 5-point Likert scale. The scale assesses cognitive flexibility through three scoring types: total cognitive flexibility score, "control" subscale score, and "alternatives" subscale score, where higher scores signify increased cognitive flexibility. The reliability of the scale, examined via Cronbach's alpha and test-retest methods, yielded coefficients of .90 for the overall scale, .84 for the "control" subscale, and .90 for the "alternatives" subscale. Test-retest reliability coefficients were .75 for the overall scale, .78 for the "alternatives" sub-dimension, and .73 for the "control" sub-dimension. Confirmatory Factor Analysis (CFA) confirmed the two-factor structure, with satisfactory fit indices ( $\chi^2 = 406.98$ ,  $sd = 167$ ,  $\chi^2/sd$ ). This study underscores the scale's reliability and validity in assessing cognitive flexibility, as evidenced by a Cronbach alpha internal consistency coefficient of .90.

### Data Collection

In this study, the requisite permissions were secured for the administration of the data collection scales. The application of these tools was conducted among 493 university students actively enrolled during the 2022-2023 academic year.

### Data Analysis

In the data analysis phase, initial attention was given to missing values and outliers, followed by an examination of a normal distribution assumptions. The study assessed whether the groups exhibited normal distribution by examining skewness and kurtosis values. Skewness values ranged from -.226 to .209, and kurtosis values ranged from -.369 to -.210. The data were deemed to be normally distributed, falling within the range of -1.5 to +1.5 for both kurtosis and skewness, as suggested by Tabachnick and Fidell (2013). Consequently, parametric tests were employed. Descriptive statistical methods, including number, percentage, mean, and standard deviation, were applied for data evaluation. The independent variables encompassed grit, cognitive flexibility, and students' gender, age, university, grade, department, undergraduate grade point average, and perceived socioeconomic level. Mental well-being served as the dependent variable. Data analysis involved independent samples t-test and one-way analysis of variance (ANOVA) to discern the relationship between independent and dependent variables. Pearson Product Moment Correlation coefficient was utilized to determine variable relationships, while multiple linear regression analysis gauged the predictive capacity of variables

for mental well-being, grit, and cognitive flexibility. The analysis utilized the SPSS 25.0 package program, setting a significance level of .05.

### Findings

In this section, the findings obtained as a result of the study and explanations of these findings are given.

The lowest score of university students on the mental well-being scale was 27 and the highest score was 70. The mean value of the mental well-being subscale scores was 50.90. The lowest score obtained by university students from the Cognitive Flexibility Scale was 53 and the highest score was 100. The mean value of the cognitive flexibility scale score is 75.66. The lowest score obtained by university students from the Grit scale is 1.67 and the highest score is 5. The mean value of the grit scale score is 3.33. Skewness values ranged between -.226 and .209 and kurtosis values ranged between -.369 and -.210.

### Findings Related to Mental Well-Being Levels of University Students in Emerging Adulthood by Gender

It was examined whether there was a significant difference between the mental well-being levels of university students in emerging adulthood according to gender and for this purpose, a t-test for independent samples was conducted. The results are presented in Table 3.

In Table 3, no significant difference was found between the mental well-being levels of university students in terms of gender ( $t(491) = -.285$ ,  $p > .05$ ). The mean mental well-being score of female students ( $\bar{x} = 3.63$ ) and the mean mental well-being score of male students ( $\bar{x} = 3.65$ ). Since the mean scores are similar, it can be said that the difference in mental well-being is not due to gender.

### Findings Related to Mental Well-Being Levels of University Students in Emerging Adulthood According to Class Level

Research into whether there exists a significant difference in the mental well-being levels of university students in emerging adulthood based on their grade level was conducted using a one-way analysis of variance (ANOVA). The outcomes of this analysis are presented in Table 4.

Analysis of the Table 4 sets forth that 100 of 493 university students were the 1st year, 174 were the 2nd year, 120 were the 3rd year and 99 were the 4th year. When the arithmetic averages were compared, it was seen that the highest mean mental well-being score was in the 1st grade ( $\bar{x} = 3.74$ ) and the lowest mean mental well-being score was in the 2nd grade ( $\bar{x} = 3.56$ ).

**Table 2.** Descriptive statistics of the study group

Variables	$\bar{X}$	Ss	Minimum	Maximum	Skewness	Kurtosis
Mental Well-Being	3.64	.665	1.93	5	-.226	-.210
Cognitive Flexibility	3.78	.499	2.65	5	.209	-.369
Grit	3.33	.667	1.67	5	-.090	-.256

**Table 3.** T test results applied to mental well-being scores of university students in emerging adulthood by gender

Gender		n	$\bar{X}$	Ss	t	df	p	$n^2$
Mental well-being	Female	349	3.63	.664	-.285	491	.387	.028
	Male	144	3.65	.667				

**Table 4.** Descriptive statistics of mental well-being scores of university students in emerging adulthood by classes

	Class	n	$\bar{X}$	Ss
Mental Well-Being	1	100	3.74	.649
	2	174	3.56	.666
	3	120	3.58	.688
	4	99	3.72	.633
	Total	493	3.64	.665

**Table 5.** One-way analysis of variance results applied to mental well-being scores of university students in emerging adulthood according to their grades

		Sum of squares	Sd	Mean squares	F	P
Mental Well-Being	Between groups	3.216	3	1.072	2.448	.063
	Within groups	214.089	489	.438		
	Total	217.305	492			

**Table 6.** Descriptive statistics of mental well-being scores of university students in emerging adulthood according to academic achievement

		n	$\bar{X}$	Ss
Mental Well-Being	2.49-0	42	3.58	.655
	2.99-2.50	180	3.62	.699
	3.49-3.00	205	3.62	.644
	4.00-3.50	66	3.75	.640
	Total	493	3.64	.665

When Table 5 is analyzed, there is no significant difference in students' mental well-being scores in terms of grade level.

**Findings on Mental Well-Being Levels of University Students in Emerging Adulthood as Per Their Academic Success**

Research on whether there is a significant difference between the mental well-being levels of university students in emerging adulthood according to their academic achievement was conducted by one-way analysis of variance and the results are given in Table 6.

When Table 6 is analyzed, it is seen that 42 of 493 university students have a GPA between 2.49-0, 180 of them have a GPA between 2.99-2.50, 205 of them have a GPA between 2.49-3.00, and 66 of them have a GPA between 4.00-3.50. When the arithmetic averages were compared, it was seen that the highest mean mental well-being score was found in students with a GPA between 4.00 and 3.50 ( $x=3.75$ ) and the lowest mean mental well-being score was found in students with a GPA between 2.49 and 0 ( $x=3.58$ ).

When Table 7 is examined, there is no significant difference in terms of the students' mental well-being ( $F=.833$ ,  $p>.05$ ), since the p values were greater than 0.05.

**Findings Regarding the Mental Well-Being Levels of University Students in Emerging Adulthood According to Their Perceived Socio-Economic Levels**

Whether there is a significant difference between the mental well-being levels of university students in emerging adulthood according to their perceived socio-economic levels was examined by one-way analysis of variance and the results are given in Table 8.

When Table 8 is analyzed, it is seen that 51 out of 493 university students have a low perceived socio-economic level, 418 have a medium perceived socio-economic level and 24 have a high perceived socio-economic level. When the arithmetic averages were compared, it was seen that the highest mean mental well-being score was at the high socio-economic level ( $x=4.24$ ) and the lowest mean mental well-being score was at the low socio-economic level ( $x=3.30$ ).

**Table 7.** One-way analysis of variance results applied to mental well-being scores of university students in emerging adulthood according to their grade point average

		Sum of squares	Sd	Mean squares	F	p
Mental Well-Being	Between groups	1.105	3	.368	.833	.476
	Within groups	216.199	489	.442		
	Total	217.305	492			

**Table 8.** Descriptive statistics of mental well-being scores of university students in emerging adulthood according to perceived socio-economic level

		n	$\bar{X}$	Ss
Mental Well-Being	Low	51	3.30	.709
	Middle	418	3.64	.636
	High	24	4.24	.620
	Total	493	3.64	.665

**Table 9.** One-way variance analysis results applied to mental well-being scores of university students in emerging adulthood according to socio-economic levels

		Sum of squares	Sd	Mean squares	F	p	Significant difference	Effect size
Mental Well-Being	Between groups	14.715	3	7.357	17.795	.001	1<2<3, 1<2	.068
	Within groups	202.590	489	.413				
	Total	217.305	492					

\*\* $p < .01$ **Table 10.** Pearson product moment correlation coefficients between variables

Variables	1	2	3
Mental Well-Being	1		
Cognitive Flexibility	.54***	1	
Grit	.46***	.52***	1

\*\*\* $p < .001$ **Table 11.** Multiple linear regression analysis of mental well-being

<	R	R <sup>2</sup>	B	Standard error	$\beta$	t	p	Binary r	Partial r
Fixed	.58	.34	.756	.189		3.995	.000		
C. F.			.539	.57	.405	9.406	.000	.537	.391
Grit			.253	.043	.254	5.897	.000	.464	.257

Note: C.F.: Cognitive Flexibility.

When Table 9 is examined, a significant difference was found in terms of socio-economic level in the mental well-being ( $F=17.795$ ,  $p<.05$ ) scores of the students as the p values were less than 0.05. the LSD test was conducted to determine the source of this difference. According to the LSD test results, the mental well-being levels of students reporting high socio-economic status were significantly higher than those of students reporting low and medium socio-economic status. In addition, the mental well-being levels of students reporting low socio-economic status were significantly lower than those of students reporting medium socio-economic status.

#### Findings Regarding Whether There Is a Significant Relationship Between Cognitive Flexibility, Grit Levels and Mental Well-Being Levels of University Students in Emerging Adulthood

In order to determine the correlation between the dependent and independent variables regarding whether there is a significant relationship between the mental well-being levels of university students in emerging adulthood and their grit and cognitive flexibility, pairwise correlation coefficients were examined and given in Table 10.

According to Table 10, there is a positive and moderately significant relationship between students' mental well-being scores and their cognitive flexibility scores ( $r=.54$ ,  $p<.001$ ) and grit scores ( $r=.46$ ,  $p<.001$ ).

#### Findings on Whether Cognitive Flexibility and Grit Significantly Predict Mental Well-Being of University Students in Emerging Adulthood

Multiple linear regression analysis was performed on the data to determine whether the mental well-being levels of university students in emerging adulthood were significantly predicted by cognitive flexibility and grit and the results are given in Table 11. When Table 11 is analyzed, it is seen that the model constructed according to the results of multiple regression analysis is significant ( $R=.579$ ;  $R^2=.335$ ;  $F=123.579$ ;  $p<.01$ ). When the model was considered, it was seen that cognitive flexibility ( $B=.539$ ,  $t=9.406$ ,  $p<.01$ ) and grit ( $B=.253$ ,  $t=5.897$ ,  $p<.01$ ) variables, which contributed

significantly, predicted mental well-being significantly. According to this model, it can be stated that students' cognitive flexibility and grit scores explain 33.5% of their mental well-being scores.

#### Discussion and Conclusion

In this section, conclusions and discussions are provided according to the data obtained from the research. First, the findings on whether the mental well-being levels of emerging adulthood students differ according to demographic variables were discussed. Secondly, the findings on the relationship between mental well-being, cognitive flexibility and grit of emerging adulthood students were discussed. Finally, the findings regarding the prediction of cognitive flexibility and grit on mental well-being were discussed.

The study indicates that the mental well-being levels of university students in emerging adulthood do not exhibit significant differences based on gender. The study specifically found no noteworthy distinction in mental well-being levels between male and female participants, with observed mean scores closely aligned. This observation aligns with existing literature, including studies by Avşaroğlu (2017), Demirel & Özhan Elbaş (2019), Diener & Ryan (2009), Duman et al. (2020), Söner & Yılmaz (2018), Şahin (2018) and Üstün (2019) supporting the notion that participants' mental well-being levels do not significantly vary according to gender. However, in the literature, different results in favor of females regarding whether mental well-being levels change in terms of gender (Cenkseven, 2004; Cenkseven & Akbaş, 2007; Özden, 2014; Özen & Gülaçtı, 2012; Ryff, 1989; Ryff & Singer, 2008; Saföz-Güven, 2008; Wood et al., 1989) are also found. The high mental well-being of females can be explained by the fact that they are more open to communication and personal development and express their feelings and thoughts more (Kılınçoğlu, 2020). There are also different results (Fuller et al., 2004; Gündoğdu & Yavuzer, 2012; Gürkan & Gür, 2019; Haring et al., 1984; Tekkurşun Demir et al., 2018; Tennant et al., 2007) in favor of males regarding whether mental well-being levels change in terms of gender. The reason why mental well-being is higher in males can be explained by the fact that males have higher mental well-being scores than females and

that men are less emotional / more prone to logical reactions in the direction of human nature related to gender (Tunc, 2021). In the current study, it is evident that there is no substantial difference in mental well-being levels based on gender, emphasizing the similarity in expectations and responsibilities faced by both male and female university students. Common factors such as economic concerns, academic achievements, family planning, and employment pursuits contribute to the absence of a significant gender-related disparity in their mental well-being levels.

There was no significant difference in the mental well-being levels of university students in emerging adulthood according to their grade level. In the study, it was found that the highest mean mental well-being was found in the 1st grade students and the lowest mean mental well-being was found in the 2nd grade students. Literature includes a study (Özden, 2014) that supports the finding that the depression levels of first grade students are higher than in other grades. There are studies (Chao, 2012; Durand-Bush et al., 2015; Glozah, 2013; Gönener et al., 2017; Seyhan, 2013) in which mental well-being levels do not differ significantly in terms of grade level. According to the findings of this study, mental well-being levels did not differ significantly according to grade level. As a result of the study, the reason why there was no difference between grade level and mental well-being can be expressed as the fact that the subjects studied are not learned at a certain grade level or course curriculum; individuals can encounter them at any age according to their interests and personal development (Kılınçoğlu, 2020).

It was observed that the mental well-being levels of university students in emerging adulthood did not differ significantly according to their GPA. In the study, it was found that the highest mean mental well-being was found in students with a GPA of 4.00-3.50 and the lowest mean mental well-being was found in students with a GPA of 2.49- 0. Gönener et al. (2017) reported that there was no significant difference between mental well-being and perceived academic achievement in a study on the effect of university students' mental well-being levels on their happiness levels. According to the results of this study, although there was no statistically significant differentiation between mental well-being and GPA, it was observed that as students' mental well-being levels increased, their GPAs increased.

It was observed that the mental well-being levels of university students in emerging adulthood differed significantly according to socioeconomic level. In terms of socio-economic level, it was found that the highest mean mental well-being was found in students with a high socio-economic level and the lowest mean mental well-being was found in students with a low socio-economic level. There are studies supporting these findings in the literature (Biswas-Diener, 2002; Black & Krishnakumar, 1998; Cenkseven, 2004; Diener & İlhan, 2009; Kaplan et al., 2008; Kılınçoğlu, 2020; Mao, 2012; Özden, 2014; Zümbül, 2019).

As per the study's findings, a noteworthy correlation was identified between the mental well-being levels of university students in emerging adulthood and their cognitive flexibility. This outcome aligns with the results of a study conducted by Özhan and Boyacı (2021), where they similarly concluded that cognitive flexibility contributes to an elevated level of mental well-being. Supporting this, Demirbilek (2021) asserts that heightened cognitive flexibility corresponds to increased subjective well-being scores. Additionally, Bedir (2023) contends that enhancing cognitive control and flexibility in

athletes positively impacts their mental well-being. İmroğlu et al. (2021) emphasize that immediate adaptation to new situations, awareness of novel approaches, grit in the face of challenges, proactive problem-solving, and receptiveness to new information collectively contribute to an individual's improved well-being.

According to the findings of the study, a significant correlation was found between the mental well-being levels of university students in emerging adulthood and their grit levels. This finding of the study is similar to the findings of the study conducted by Kardaş and Yıldız (2020). In their study, they worked with 600 students, 300 females and 300 males, who were studying in high schools. As a result of this study, it was concluded that grit increases the level of mental well-being. In addition, they found that the grit dimension of grit was a significant predictor of well-being. Yıldız (2019) states that the more grit an individual shows, the healthier emotional life he/she will have, and that grit will bring success and success will increase the psychological well-being of individuals. Deci and Ryan (2002) and Sheldon (2004) state that there is an autonomous, determined effort to achieve certain goals and well-being. According to the findings obtained from the study, it was concluded that cognitive flexibility significantly predicted mental well-being. The findings of this study are in line with the findings of the study conducted by Fu and Chow (2016).

Based on the study's findings, it was determined that cognitive flexibility serves as a significant predictor of mental well-being. These results are consistent with the outcomes of a study conducted by Fu and Chow (2016). Supporting this notion, Özabacı and Parvizi (2022) propose that individuals with a high degree of cognitive flexibility enhance their autonomy by exploring various alternatives and improve the quality of their relationships by providing alternative explanations for human behaviors. Malkoç and Mutlu (2019) observe that individuals displaying high resilience often report elevated levels of psychological well-being. In line with this perspective, Fredrickson (1998) asserts that cultivating more flexible and less rigid thoughts is crucial for an individual to achieve psychological health, leading to a more satisfying life and relationships. Consistent with these views, Aydınay-Satan (2014) concludes that cognitive flexibility significantly influences subjective well-being.

According to the findings of the study, it was concluded that grit significantly predicted mental well-being. This finding of the study is in parallel with the findings of the study conducted by Akbag and Ümmet (2017). Ryan and Deci (2000) state that well-being and intrinsic motivation increase as an individual's autonomy, relationship and competence needs are met. Bayraktutar (2012) states that grit, that is, being determined, requires psychological well-being as well as intrinsic motivation. Falecki (2015) explains students' subjective well-being as showing a high level of grit, being satisfied with social relationships, being constantly positive, and using their maximum potential.

According to the findings obtained in the study and the reviews in the literature, it was seen that there was a positive and significant relationship between cognitive flexibility, grit and mental well-being variables and that cognitive flexibility and grit predicted mental well-being. From this point of view, despite the obstacles and difficulties encountered in the journey of life, it is thought that seeking new ways, producing alternatives, coping with difficult situations and the stress they bring will contribute to mental health. It can also be said that

striving towards certain goals in life and making a determined effort without giving up will make the individual feel good. As a result, in this study, it was found that cognitive flexibility and grit variables significantly predicted mental well-being. This situation indicates that individuals who show quick and easy mental adaptation to the changes faced by students in emerging adulthood and who constantly work to achieve their goals feel happier, experience more positive emotions and are more optimistic about their future lives.

### Recommendations

Qualitative studies can be conducted to reveal other variables affecting mental well-being, cognitive flexibility and grit and to provide in-depth data. According to the results of the research, it was found that the level of mental well-being will increase with the increase in cognitive flexibility level. Psychoeducational studies can be implemented for university students to increase cognitive flexibility.

There are few studies in the literature that address the variables of mental well-being and academic achievement. The relationship between mental well-being and academic achievement can be investigated. This research was conducted without any provincial limitation. The research can also be conducted in a region or a single province. In this study, mental well-being levels in emerging adulthood, perseverance and cognitive flexibility were addressed together. Similar studies can be conducted with high school students, adults or children in addition to university students.

### Author Contributions

This study is derived from Ayşe Deniz master's thesis entitled "Investigation of Mental Well-Being Levels in Emerging Adulthood in terms of Perseverance and Cognitive Flexibility", completed under the supervision of Dr. Nezir Ekinçi. All authors have read and approved the final version of the study.

### Ethical Declaration

The purposes and procedure of the current study were granted approval from the ethical committee of the Karamanoğlu Mehmetbey University. (Session Date: 29 November 2022; Session Number: 08-2022/226).

### Conflict of Interest

The authors declare that there is no conflict of interest with any institution or person within the scope of the study.

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