

## For Generation Z: What Is the Underlying Reason Between Emotional Intelligence and Depression Relationship?

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### Z Kuşağı İçin: Duygusal Zekâ Özelliği ve Depresyon İlişkisinin Arkasında Yatan Sebep Nedir?

#### Abstract

Exploring the individual characteristics of Generation Z becomes crucial with this generation's increasing number and significance in business life. This study investigates the mediating role of life satisfaction on emotional intelligence and depression linkage. It examines whether the mediating role is contingent upon Generation Z's majors (STEM/non-STEM) and gender. The universe was Generation Z university senior students. Data were gathered via an online survey (emotional intelligence, life satisfaction, depression scales) from 844 university students. Findings reveal that emotional intelligence decreases depression via life satisfaction. Gender moderated this relationship so that the mediating role of life satisfaction was more pronounced in female Generation Z.

**Keywords** : Generation Z, Emotional Intelligence, Life Satisfaction; Depression.

**JEL Classification Codes** : I23, I31, J10.

#### Öz

Z Kuşağı'nın iş hayatında artan sayıları ile birlikte öneminin de anlaşılması, bu kuşağa ilişkin bireysel özelliklerin araştırılmasını gerektirmiştir. Bu çalışma, yaşam doyumunun duygusal zekâ ile depresyon arasındaki ilişki üzerindeki aracı rolünü araştırmakta ve aracılık etkisinin Z Kuşağı olan katılımcıların üniversite alanlarına (STEM/STEM dışı alan) ve cinsiyetlerine göre farklılık gösterip göstermediğini incelemektedir. İş hayatına adım atacak olan Z kuşağı üniversite son sınıf öğrencilerinin evreni oluşturduğu çalışmada veriler, çevrimiçi anket ile (duygusal zekâ, yaşam doyum, depresyon ölçekleri) 844 lisans öğrencisinden toplanmıştır. Bulgular, duygusal zekanın depresyonu yaşam doyumunu aracılığıyla azalttığını ortaya koymaktadır. Yaşam doyumunun aracılık rolünün kadın Z Kuşağı'nda daha belirgin olduğu tespit edilmiştir.

**Anahtar Sözcükler** : Z Kuşağı, Duygusal Zekâ, Yaşam Doyumu, Depresyon.

## 1. Introduction

For the first time in history, five generations are active in business life: Traditionalists (1900-1946), Baby Boomers (1947-1964), Generation X (1965-1980), Generation Y (1981-1995) and Generation Z (1996-Present) (Oblinger & Oblinger, 2005). Generational cohort theory identifies that experiences and events combine individuals within each group with similar beliefs, values and attitudes, which set them apart from other cohort groups (Inglehart, 1977). The generational differences among the first four generations have been broadly discussed in academic research, conferences, popular media and business-oriented books (Oh & Reeves, 2011; Wasserman, 2007). What about the newest generation (also known as Generation Z, Gen Z, Gen Zers)<sup>1</sup> who is currently (and will be soon) entering the job market? Gen Z should be viewed as leaders of tomorrow. Gen Z is bright as they can process a large amount of material and information rapidly but cannot process the information emotionally (Nagy & Székely, 2012). Research suggests that Gen Z teenagers differ in terms of emotional intelligence from other age cohorts (Gentina et al., 2018).

Emotional intelligence is identified as the ability to sense emotions and emotions to improve thinking capabilities (Mayer & Salovey, 1997). There are two main approaches to studying emotional intelligence: ability and trait models. The former describes emotional intelligence as a set of capabilities for the emotional expressions, regulation and utilisation of emotions in the process of acting and thinking (Mayer & Salovey, 1997). The latter takes a narrow approach to emotional intelligence, including traits, social skills and dispositional behaviour (Petrides & Furnham, 2000). The trait emotional intelligence approach engages in personality variables such as optimism, impulsivity and empathy. Trait emotional intelligence involves constructs that have potential correlates such as happiness, motivation and self-awareness. In contemporary research, both the measures of ability and trait emotional intelligence have been proven to have predictive validity (Mikolajczak et al., 2007; O'Connor & Little, 2003).

Trait emotional intelligence is an important predictor of real-life outcomes. It has become a widespread interest in academic and psychological research in recent years due to its relationships with subjective well-being (Mavroveli et al., 2007), job satisfaction (Kafetsios & Zampetakis, 2008), organisational commitment (Petrides & Furnham, 2006), academic achievement (Mohzan et al., 2013) and stress (Ciarrochi et al., 2002). Another area of study where the effect of trait emotional intelligence might be influential is depression. For a long time, much research has been applied to investigate and understand the major causes of depression. Although the negative relationship between trait emotional intelligence and depression has been well reported (Davis & Humphrey, 2012; Salguero et al., 2012) underlying process of this relation, specifically for Gen Z, is inconclusive. Hence, the research question which intrigues the researchers arises: How does Gen Zers' trait emotional intelligence affect their depression levels?

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<sup>1</sup> "Gen Z" and "Gen Zers" phrases are used interchangeably in the current study.

Theoretically, emotional intelligence is associated with numerous essential human values, such as the quality of social and interpersonal relationships and life satisfaction (Bar-On, 2010). Trait emotional intelligence and life satisfaction are important resources for enhancing students' learning, success and quality of education (Salami, 2010). Research with self-report measures has found positive correlations between trait emotional intelligence and life satisfaction (Ciarrochi et al., 2002). Life satisfaction has been associated with negative, depressive symptoms (Davis & Humphrey, 2012).

This study aims to propose and test an integrative model examining the mediating role of life satisfaction on the relationship between trait emotional intelligence and depression with a focus on Gen Z. The study focuses on discovering the fundamental components of Gen Zers in the self-perceptions form. The conceptual model proposes that high levels of trait emotional intelligence in Gen Zers will subsequently lead to reduced levels of depression via enhancing their life satisfaction. The theoretical rationale for the proposed model can be found in positive psychology movement theory (Fredrickson, 2001; Seligman and Csikszentmihalyi, 2000), which argues about the circumstances and practices that contribute to the thriving and/or the ideal functioning of groups and people in the society (Gable and Haidt, 2005). Accordingly, when the individuals engage in positive thinking (e.g., via trait emotional intelligence) and feel a deeper sense of happiness (e.g., via life satisfaction), they minimise their preoccupation with the tragic and stressful side of life events (e.g., abstain from depression) and experience subjective well-being (Seligman & Csikszentmihalyi, 2000). Thus, this study will contribute to the positive psychology movement theoretical framework and emphasise the merit of trait emotional intelligence as a promoter and facilitator in life satisfaction, which helps reduce depression in Gen Z.

The majority of the Gen Z population consists of students. Therefore, the present study's sample comprises undergraduates studying at universities. We believe that demographic variables like gender (Petrides & Furnham, 2000) and major fields (Chen & Weko, 2009) might play considerable roles in trait emotional intelligence-depression linkage. Hence, the second purpose of this research is to examine the moderating roles of gender and major fields, such as STEM (Science, Technology, Engineering, and Mathematics) and non-STEM (Social Sciences), on the proposed mediated model. In this regard, this research will contribute to the literature by fulfilling the calls of several authors to further research on the gender differences in trait emotional intelligence among different majors by recruiting samples of sufficient size and additional faculties (e.g., business and management, engineering) (Sanchez-Ruiz et al., 2010).

Gen Z's emotional profiles, beliefs, values and attitudes might differ across countries and cultures (Yüksekbilgili et al., 2015). As the present study focuses on Gen Z, the first common characteristics of this target generation in the international and the national context will be discussed before the theoretical framework and hypotheses.

### ***Gen Z: International versus Turkish Context***

The new generation, born between 1996 and 2010, is known by various names: Generation Z, Gen Z, Gen Zers, the I-Generation, Gen Tech, Digital Natives, New Silent, iGen and the Post-Millennial (Csobanka, 2016). In the U.S., there are approximately 61 million Gen Zers, a larger group than Generation X and two-thirds of Baby Boomers (Tickell, 2018). Gen Zers were born and raised in the heart of technology. In terms of the international context, Gen Z witnessed various historical and economic events, the technology revolution being the most influential, such as Iraq/Afghanistan war, the Tsunami disaster in Asia, Wikileaks, Arab Spring, Syrian refugees, and ISIS. They were born in a world marked by terrorism (post 9/11) and an unstable economic context.

Gen Zers are innovative and think of themselves as the creators of a novel society with greater recognition and tolerance of diverse sexes, races and religions. Their characteristics are marked by their independence, innovativeness, mobility and flexibility level. Gen Zers lack interpersonal skills due to their interest in technology (Bejtkovský, 2016). As Gen Zers are social media savvy, most suffer from chronic sleep deprivation (Nagy & Székely, 2012). Gen Z is a multi-tasker and concerned about the environment. Gen Zers are less likely to develop social skills that lead to intimate and genuine interpersonal relationships due to their technological addiction when compared to the Traditionalists, Baby Boomers and Generation X. When compared with the older generations; it is much harder to educate, train and direct Gen Z employees as this generation is not so good in the social interactions. Gen Zers are intelligent, self-motivated, and able to process information at a rapid speed (Seemiller & Grace, 2016). Gen Zers have a more realistic point of view in terms of life events. They are more aware of the opportunities due to technological advancements than the previous generations (Cho et al., 2018). Gen Zers are also known for their importance in defending others' rights and their own. This generation aims to make a radical positive social change in the world (Csobanka, 2016). Furthermore, this generation is considered to have low levels of organisational commitment in the workplace. Gen Zers like to boast about their achievements, even if they are the youngest generation in business life (Cho et al., 2018).

The organisational and societal culture of Turkey can be described as a combination of "Eastern" and "Western" values (Ayca, 2001). Recent political, social, and economic problems have led to uncertainty in the country (Demir & Ersan, 2018). Despite the scarcity of research in a national context, Gen Z was defined as having certain global characteristics such as technology orientation, independence and individuality in the Turkish context (Arar & Yüksel, 2015). Turkish Gen Z starts to use computers at the age of eight, use the Internet at the age of 9 and have their smartphones at the age of 10 (Özkan & Solmaz, 2015). Turkish Gen Z students scored highest in supporting free speech (Broadbent et al., 2017), one of this generation's main features. Furthermore, with the USA, Canada, New Zealand and South Africa, Turkish Gen Zers scored the highest in their desire to work for an organisation that promotes positive social change for their future career.

## 2. Theoretical Framework and Hypotheses

For over a decade, the trait emotional intelligence has been the subject of intensive theoretical examination. Trait emotional intelligence is consistent in emotions and behaviours such as optimism, empathy and adaptiveness. It relies upon the individual differences in self-perceptions of an individual's emotional capabilities (Petrides & Furnham, 2000). Research suggests that the trait emotional intelligence is a proxy for the self-perceptions which are related to emotions and relevant to positive life outcomes, including greater well-being (Schutte & Malouff, 2011). Conversely, the self-reported trait emotional intelligence is negatively related to depression (Fernandez-Berrocal et al., 2006). Depression has been defined as a pervasive mental health problem with heterogeneous etiological origins (Ciarrochi et al., 2002). Depression cases can be explained by environmental influences and life stress, cognitive and biological factors (Beck & Bredemeier, 2016). The negative effects of trait emotional intelligence on depression have been investigated in several studies (Fernandez-Berrocal et al., 2006; Mavroveli et al., 2007). Considering the negative impact of trait emotional intelligence on depression, research asserts that there can be potential mediating effects on the trait emotional intelligence-depression linkage (Hertel et al., 2009; Mikolajczak et al., 2007).

Life satisfaction is an important facet of dealing with depressive symptoms. Trait emotional intelligence has been theoretically suggested to predict life satisfaction (Kong et al., 2012). Life satisfaction is a significant construct associated with depression (Fernandez-Berrocal et al., 2006). Therefore, life satisfaction is argued to act as an important psychological mechanism to mediate the relationship between Gen Z's trait emotional intelligence and depression.

The theoretical lens underpinning the mediating effect of life satisfaction on the association between trait emotional intelligence and depression linkage is the positive psychology movement theory (Fredrickson, 2001; Seligman & Csikszentmihalyi, 2000), which assumes that the total balance of individuals' negative and positive emotions has been revealed to predict and influence their judgments concerning subjective well-being. Individuals' subjective well-being has been defined by their conscious experiences in terms of cognitive satisfaction and/or hedonic feelings; thus, concerned with individuals' subjective experiences of their lives (Diener, 2000). Subjective well-being, or happiness, is the meaning and purpose of life; thus, the ultimate objective and outcome of human existence (Huta & Ryan, 2010). Research on subjective well-being has been associated positively with emotional intelligence (Schutte & Malouff, 2011) and with the absence of depressive symptoms (Luhmann et al., 2012).

Emotional intelligence has been considered an essential part of positive psychology (Bar-On, 2010). People with higher emotional capabilities have a greater capacity to recognise, use and cope with their emotions in their selves and others that enhancing their feelings of subjective well-being (Mayer & Salovey, 1997). Higher levels of trait emotional intelligence have been determined to be related to indices of subjective well-being such as

life satisfaction (Schutte & Malouff, 2011). People who possess trait emotional intelligence characteristics such as adaptability and self-motivation, assertiveness, emotional management and social awareness experience greater subjective well-being and higher inclination towards satisfaction with their lives (Chamorro-Premuzic et al., 2007). Given the existence of intrapersonal aspects of trait emotional intelligence related to emotion regulation and interpersonal aspects like having positive relations with others (Austin et al., 2005), it seems reasonable to assume that high trait emotional intelligence would be associated with high satisfaction with life and in turn, result in lower levels of depression. High trait emotional intelligence may serve as a coping resource and protective factor. People with high trait emotional intelligence are assumed to demonstrate better adjustment and higher positive coping with unfavourable life events that may further foster well-being, which cause higher life satisfaction resulting in reduced depression. According to positive psychology movement theory, individuals, who have high levels of subjective well-being, such as life satisfaction (via high trait emotional intelligence in this study), would experience hedonic feelings more and go through disruptive feelings, such as depression, less (Seligman & Csikszentmihalyi, 2000).

Depression has been rated as the fourth-largest cause of health issues due to its effects on the individual in terms of anxiety, sad mood, irritability and losing productivity (Downey et al., 2008). Much of the research conducted to date on depression, in particular, has been carried out primarily on previous generations, such as Generation X (Njoroge & Yazdanifard, 2014) and Millennials (Ordun & Akun, 2016). Considering that more than 300 million people worldwide suffer from depression, significant ways to decrease the rates, especially in Gen Zers, are being sought after.

To summarise, previous research supports (1) links between trait emotional intelligence and depression (Hansenne & Bianchi, 2009) and (2) the relationship between life satisfaction and depression (Mahmoud et al., 2012). On the other hand, to the authors' knowledge, no study has investigated whether this relationship is mediated through life satisfaction for Gen Z. It might be that Gen Zers' trait emotional intelligence is primarily related to their life satisfaction and that this strong sense of satisfaction might contribute to lower levels of depression. Based on this discussion, we propose the following hypothesis:

**H1.** Gen Zers' life satisfaction will mediate the relationship between their trait emotional intelligence and depression levels.

### **2.1. The Role of Gender**

Gender plays a role concerning trait emotional intelligence such that females score higher than males as they are more empathic, perceptive and flexible (McIntyre, 2010). On the other hand, prior research has focused on the gender differences in depression such that females are at increased risk of depression at earlier ages since competing social roles, role limitation with associated lack of choice and role overload leads to females' increased risk of depressive feelings (Piccinelli & Wilkinson, 2000). There are significant gender

differences in the pervasiveness of depression. Higher prevalence rates of depression are reported among females compared to males, and the gender differences observed among adults are similar among adolescents (Frost et al., 2015). The eliciting conditions for experiences of depression differ by gender, such that females tend to experience more sadness and inner-directed negative emotions. In contrast, males feel more outer-directed negative emotions (Albert, 2015). Thus, it might be that females who have low trait emotional intelligence would be inclined to experience higher depressive symptoms than males.

Research has also provided evidence that gender differences play a major role in life satisfaction, such that males score higher on life satisfaction than females (Goldbeck et al., 2007; Moksnes et al., 2013). While research on gender differences in depressive symptoms has flourished (Salk et al., 2017; Weinberger et al., 2018), the underlying mechanism for the gender differences, specifically for Gen Z, has been virtually ignored. Various effects of emotional intelligence and life satisfaction on females' greater vulnerability to depressive symptoms have been suggested. Nonetheless, the relationships among these aforementioned factors leading to more depression in females have not been explored. Behavioural theories of females' greater vulnerability to depressive symptoms compared with that of males generally attribute this vulnerability to the negative consequences of females' social status and power (Bandura, 1986). Females tend to experience more negative events and have less control over important areas of their lives than males (Nolen-Hoeksama et al., 1999). This gender difference in depression appears to emerge in the early years (i.e., for Gen Z) and then remains throughout the adult life span (Salguero et al., 2012).

While considering the proposed model, generating a more thorough understanding of the relationships among the study variables may therefore require further investigating whether the strength of these relationships differs on gender for Gen Z. Thus, we hypothesise that:

**H2.** Gen Z's gender type will moderate the strength of the mediated relationship between their trait emotional intelligence and depression levels. The mediated relationship will be weaker for the male group than for the female group.

## **2.2. Role of STEM versus non-STEM Major Fields**

Research provides evidence that students (e.g., Gen Z) in different academic disciplines have different emotional profiles (Sanchez-Ruiz et al., 2010). Although there are various approaches to classifying academic disciplines in terms of majors (Becher, 1994; Stoecker, 1993), the most contemporary one is dividing majors as STEM (Science, Technology, Engineering and Mathematics, including physical, biological/agricultural engineering/engineering technologies, and computer/information sciences) and non-STEM (all other majors including social sciences such as management, psychology, law, economics, international relationships and art) (Chen & Weko, 2009). Students in non-STEM majors have higher scores than STEM students in empathy and cooperation (Babbage

& Ronan, 2000). Traits like empathy and emotional expression are not equally important in engineering and social sciences majors. These traits are mostly considered in social sciences such as management, psychology and sociology. Students in social sciences are more capable of fulfilling personal relationships and communicating their feelings to others when compared with those in STEM majors (Sanchez-Ruiz et al., 2010). The former is more explicit about their own and others' emotions and less likely to give in to their urges than the latter. Therefore, social sciences students score higher than engineering students in trait emotional intelligence (Groen et al., 2018). Research provides evidence that the trait emotional intelligence of university students differs among majors. Students from non-STEM majors score higher in trait emotional intelligence than those in STEM majors (Groen et al., 2018; Sanchez-Ruiz et al., 2010).

Research has also ascertained that subjective well-being, like depressive symptoms that are assessed as negative and life satisfaction, is closely linked to social interests (Staggs et al., 2007). Students in non-STEM majors are more cheerful and satisfied with their lives than those in STEM. They are good at controlling their emotions and regulating stress (Sanchez-Ruiz et al., 2010). Considering the potential mediating effect of life satisfaction on the trait emotional intelligence-depressive symptoms linkage, the extensive literature on emotional profiles among different academic majors can steer the development of a hypothesis such that:

**H3.** Major fields (STEM versus non-STEM) will moderate the strength of the mediated relationship between Gen Z's trait emotional intelligence and depression levels. The mediated relationship will be weaker for STEM majors than for the non-STEM group.

### **3. Methodology**

#### **3.1. Participants and Procedure**

All participants were chosen from Gen Z (1995-2010) undergraduates studying in STEM and non-STEM majors. The data were drawn from two private universities located in Ankara, Turkey. Data collection continued between the period of January-February 2019. A survey-based research design has been instrumented for data collection. The survey was voluntarily administrated online via a web link for Gen Z students. The questionnaire included informed consent, and the participants were assured of the confidentiality of the study. The online survey form was designed in a structure that did not permit the participants to leave unanswered questions. The data collection lasted for one month. No incentives were offered for participation. In total, 844 students completed the online questionnaire. Among the participants, 57% were male, and 43% were female. Of 844 students, 53% were in STEM majors, whereas 47% were non-STEM majors. The students' CGPAs were as follows: 1.4% between 0.00 and 0.99, 9.6% between 1.00 and 1.99, 49.4% between 2.00 and 2.99, and 39.6% between 3.00 and 4.00.



### 3.2. Measures

This study utilised a cross-sectional research design. The self-reported survey included the measures of trait emotional intelligence, life satisfaction and depression scales. Demographic information was collected on gender, age, cumulative grade point average (CGPA), university, major and class.

**Trait Emotional Intelligence Questionnaire (TEIQue-SF).** Gen Zers' trait emotional intelligence levels were assessed using the Trait Emotional Intelligence Questionnaire (TEIQue-Short Form; Petrides & Furnham, 2004). The 30-item short form of TEIQue (Cooper & Petrides, 2010) yields a single score for the global trait emotional intelligence that indicates dissimilarities of each person in their comprehension of emotions across their life span (Petrides & Furnham, 2006). An example item is "I believe I'm full of personal strengths", ranked on a seven-point Likert scale from 1 (Completely Disagree) to 7 (Completely Agree). Higher scores demonstrate an increased degree of global trait emotional intelligence (Petrides & Furnham, 2004). Turkish scale adaptation was borrowed from Deniz et al. (2013) ( $\alpha = 0.81$ ).

Confirmatory Factor Analysis (CFA) was carried out to test the unidimensional factor, including full sample data (N=844). Initially, the scale with 30 items did not provide an acceptable fit with the data, with CFI and NNFI smaller than 0.90. After deleting item 17 due to an insignificant loading, and item 22 and item 23 due to low factor loadings, CFA was conducted again. The final model provided an acceptable fit to data ( $\chi^2=1305$ ,  $p < .001$ ;  $\chi^2/df = 4.02$ ; GFI=.908, CFI = .890; TLI=.816, RMSEA = .07). Then, in line with previous studies (e.g., Petrides & Furnham, 2004), a single trait emotional intelligence score was computed using all items' summation. The Cronbach alpha for the total scale with 27 items was 0.85 for the pooled sample.

Subsequently, CFAs were conducted separately for non-STEM (N=398) and STEM majors (N=446). After deleting the three items, the final model provided an acceptable fit to data ( $\chi^2=1180$ ,  $p < .001$ ;  $\chi^2/df = 3.64$ ; GFI=.890, CFI = .890; TLI=.871, RMSEA =.08) in non-STEM sample. CFA also yielded a reasonable fit to data in STEM sample ( $\chi^2=1327$ ,  $p < .001$ ;  $\chi^2/df = 4.09$ ; GFI=.893, CFI = .889; TLI=.861, RMSEA = .08). The Cronbach alpha coefficients of the instruments for non-STEM and STEM samples were found as 0.86 and 0.85 respectively.

**Satisfaction with Life Scale (SWLS).** Gen Zers' life satisfaction levels were assessed using the five-item scale and developed using Diener et al. (1985). A sample from the scale is "I am satisfied with my life". A seven-point agree-disagree scale was used for the responses. Turkish scale adaptation was taken from Yetim (1993) ( $\alpha = 0.86$ ).

The results of a single factor structure composed of the five items provided good fit with the pooled data ( $\chi^2=18.74$ ,  $p < .001$ ;  $\chi^2/df = 3.74$ ; GFI=.991, CFI = .994; TLI=.988, RMSEA = .04). Additional CFA results yielded a very good fit to data in non-STEM

( $\chi^2=8.19$ ,  $p < .001$ ;  $\chi^2/df = 1.63$ ; GFI=.992, CFI = .90; TLI=.897, RMSEA = .04) and STEM major samples ( $\chi^2=13$ ,  $p < .001$ ;  $\chi^2/df = 2.76$ ; GFI=.980, CFI = .990; TLI=.981, RMSEA = .06). The respondents' ratings were averaged to form a total life-satisfaction score (Judge and Watanabe, 1993). The Cronbach alpha coefficients of the instrument for the pooled, non-STEM and STEM samples were found as 0.90, 0.88 and .090 respectively.

**The Beck Depression Inventory (BDI).** The Beck Depression Inventory (BDI) (Beck et al., 1961), as the frequently used self-rating instrument for depressive symptomatology, was used to assess the participants' depression levels. The scale involves 21 items with structured explanations, including four possible stages that differ from 0 to 3. Sample descriptions for an item are as follows: "I don't feel I am being punished", "I feel I may be punished", "I expect to be punished", and "I feel I am being punished". The participants can choose more than one alternative for each item. However, only the highest rating should be considered when the total score is computed. The total score, ranging from 0 to 63, is calculated by summing up the item scores. The increase in the scores displays an increase in the levels of depression (Bringmann et al., 2015). The Turkish adaptation of the instrument was conducted by Seber et al. (1993) ( $\alpha = 0.86$ ).

The results of a one-factor structure composed of the 21 items provided good fit with the pooled data ( $\chi^2=691$ ,  $p < .001$ ;  $\chi^2/df = 4.06$ ; GFI=.910, CFI = .914; TLI=.90, RMSEA = .07). The additional CFA results yielded also adequate fit to data in non-STEM ( $\chi^2=469.2$ ,  $p < .001$ ;  $\chi^2/df = 2.76$ ; GFI=.898, CFI = .90; TLI=.897, RMSEA = .04) and STEM major samples ( $\chi^2=409$ ,  $p < .001$ ;  $\chi^2/df = 2.40$ ; GFI=.909, CFI = .908; TLI=.901, RMSEA = .05). The Cronbach alpha coefficients of the instrument for the pooled, non-STEM and STEM samples were found as 0.89, 0.91 and .089 respectively.

## 4. Results

### 4.1. Preliminary Analysis

Initially, we checked the data for missing values and normality. No univariate and multivariate outliers are detected. Then, after testing the construct validity of the scales with CFA (see measures section), we computed the composite variables.

Table 1 illustrates the descriptive statistics and correlations among the pooled/total sample study variables. Means, standard deviations and correlations for STEM and non-STEM majors are shown in Table 2. The correlations in Table 1 indicate that both trait emotional intelligence ( $r=-0.65$ ,  $p < .01$ ) and life satisfaction ( $r = -0.62$ ,  $p < .01$ ) were negatively correlated with depression in the pooled sample. As can be seen in Table 2, for non-STEM majors, trait emotional intelligence ( $r=-0.63$ ,  $p<01$ ) and life satisfaction ( $r=-0.62$ ,  $p<.01$ ) were negatively correlated with depression. Likewise, for STEM majors, both trait emotional intelligence ( $r=-0.65$ ,  $p<01$ ) and life satisfaction ( $r=-0.60$ ,  $p<.01$ ) were negatively correlated with depression.

**Table: 1<sup>2</sup>**  
**The Descriptive Statistics of Pooled Data**

Variable	Mean	S.D.	1	2	3	4	5	6
1. Gender	-	-	-	-	-	-	-	-
2. Major	-	-	-.28**	-	-	-	-	-
3. CGPA	3.27	.69	-.18**	.09**	-	-	-	-
4. Trait Emotional Intelligence	4.57	.71	-.04	.07*	.05	-	-	-
5. Life Satisfaction	4.09	1.51	-.09**	.10**	.06	.60**	-	-
6. Depression	.72	.51	.01	-.07*	-.06	-.65**	-.62**	-

**Table: 2<sup>3</sup>**  
**The Descriptive Statistics by Majors**

Variable	Mean	S.D.	1	2	3	4	5
1. Gender	-	-	-	-	-	-	-
2. CGPA	3.34 (3.20)	.69 (.68)	-.190** (-.128**)	-	-	-	-
3. Trait EI	4.63 (4.53)	.71 (.71)	-.003 (-.037)	.056 (.037)	-	-	-
4. LS	4.26 (3.95)	1.50 (1.51)	-.026 (-.099*)	-.035 (.137**)	.581** (.60**)	-	-
5. Depression	.67 (.75)	1.51 (.49)	-.030 (.014)	-.054 (-.064)	-.630** (-.655**)	-.623** (-.603**)	-

## 4.2. Hypotheses Testing

We conducted mediation and moderated mediation models that include 95% bootstrap confidence intervals (e.g., Hayes, 2013; Preacher et al., 2007). In the first analysis, a direct mediation model was utilised to test the mediating effect of life satisfaction on the relationship between trait emotional intelligence and depression in the pooled sample. The model was tested with Preacher and Hayes's (2004)'s macro. We included the Cumulative Point of Average (CGPA) scores of the students as the control variable in our analyses. The effect of the control variable at each stage was insignificant.

<sup>2</sup>  $N=844$ , \*  $p<.05$ , \*\*  $p<.01$ .

Gender coded as 0 = female, 1 = male.

Major coded as 0 = STEM, 1 = non-STEM

CGPA coded as 1 = 0.00-0.99, 2 = 1.00-1.99, 3 = 2.00-2.99, 4 = 3.00-4.00

Alpha reliabilities are shown in parentheses on the diagonal.

<sup>3</sup> \*  $p<.05$ , \*\*  $p<.01$ .

$N=398$  for non-STEM majors,  $N= 446$  for STEM majors,

Numbers in parentheses are the values for STEM sample.

Trait EI=Trait Emotional Intelligence

LS=Life satisfaction

Gender coded 0 = female, 1 = male.

CGPA coded as 1 = 0.00-0.99, 2 =1.00-1.99, 3 =2.00-2.99, 4 =3.00-4.00.

**Table: 3<sup>4</sup>**  
**Direct Mediation Model of LS on Trait EI-Depression Linkage**

	b	SE	t	p
Direct and total effects				
CGPA-Depression	-.015	.02	-.83	.40
Trait EI → Depression	-.30	.02	-14.19	.00
Trait EI → LS	1.25	.05	21.38	.00
LS → Depression	-.24	.07	-3.51	.00
Bootstrap results for Indirect Effect				
	Boot b	SE	Boot LLCI	Boot ULCI
Effect	-.15	.01	-.18	-.12
Normal theory tests for the indirect effects				
	Effect	SE	Z	p
	-.15	.01	-10.28	.00

A direct mediation model for the impact of life satisfaction on the trait emotional intelligence-depressive symptoms linkage is shown in Table 3. As shown, trait emotional intelligence had a negative effect on depression ( $b = -.30$ ,  $t = -14.19$ ;  $p = .00$ ), and trait emotional intelligence was positively associated with life satisfaction levels of Gen Z undergraduates ( $b = 1.25$ ,  $t = 21.38$ ;  $p = .00$ ). Moreover, the effect of life satisfaction on depression was negative ( $b = -.24$ ,  $t = -3.51$ ;  $p = .00$ ). Using 5000 bootstrapping sample and 95% CI, the indirect effect of life satisfaction was significant ( $b = -.15$ ,  $SE = .01$ ; 95% CI [-.18, -.12]). So, H1 was supported. The normal theory test of the indirect effect confirmed the significance of life satisfaction as a mediator ( $Z = -10.28$ ;  $p = .00$ ).

**Table: 4**  
**Results of Moderated Mediation Analysis by Gender (N=844)**

Predictor	B	SE	t	P
LS ( $R^2 = .36$ )				
Constant	- 2.51	.45	-5.55	.00
CGPA	.047	.061	.762	.45
Trait EI	1.43	.088	16.28	.00
Gender	1.29	.545	2.37	.02
Trait EI * Gender Interaction	-.32	.12	2.75	.00
Depression ( $R^2 = .50$ )				
Constant	2.72	.11	25.26	.00
CGPA	-.02	.02	-1.12	.26
Trait EI	-.30	.02	-14.06	.00
LS	-.13	.01	-9.22	.00
Gender	-.09	.07	-1.32	.18
LS * Gender Interaction	.01	.01	.81	.42
Conditional Indirect Effect of Trait EI on depression via LS by Gender				
Gender	Boot Indirect Effect		Boot SE	Boot LLCI
Female	-.184		.022	-.184
Male	-.127		.017	-.165
Mediator	Index of Moderated Mediation			
LS	.056		.026	.107

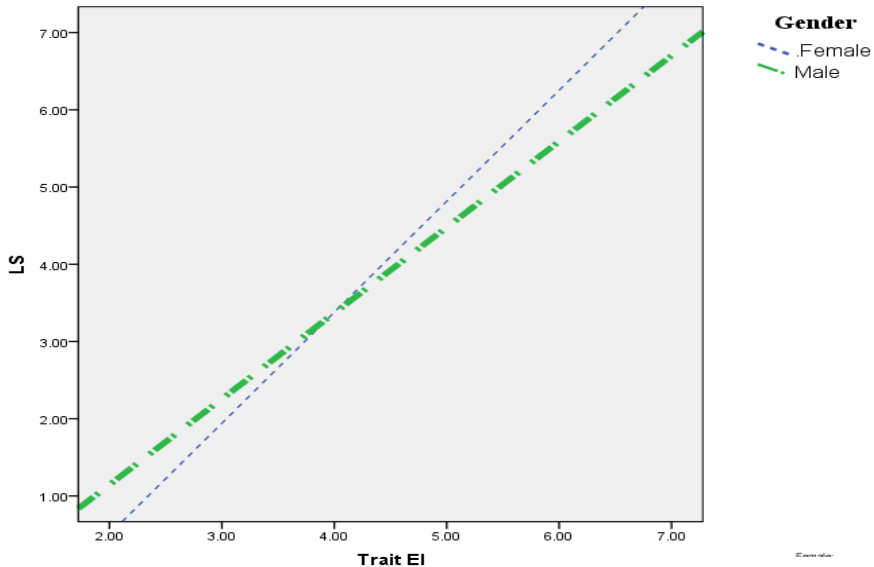
The moderated mediation tests were conducted by the PROCESS macro of Hayes (2013). For testing H2, we tested the conditional indirect effect of trait emotional intelligence

<sup>4</sup> CGPA: Cumulative Grade Point of Average, Trait EI: Trait Emotional Intelligence, LS: LS.

on depression via life satisfaction as a function of gender (female and male): table 4 displays the moderated mediation regression estimates and direct and conditional indirect effects.

Gender acted as the moderator for the trait emotional intelligence and life satisfaction linkage (the interaction term of trait emotional intelligence by gender was significant) ( $b = .32$ ,  $SE = .12$ ,  $t = 2.75$ ;  $p = .00$ ). We plotted this moderation in Figure 1.

**Figure: 1**  
**Interaction Effect of Trait EI and Gender on LS**



The effect of trait emotional intelligence on life satisfaction was much steeper in females compared to males (see Figure 1). The index of the moderated mediation in Table 4 was significant (Index=.05, boot SE= .03, 95% CI [.01, .10]), verifying the proposed hypothesised moderated mediation model (H2). That is to say, the magnitude of the mediating effect of life satisfaction on the trait emotional intelligence and depression linkage changes depending on the gender (female and male). The bootstrap for confidence levels for the conditional indirect effects of life satisfaction was significant for each gender. However, the mediating impact of life satisfaction levels on the trait emotional intelligence-depressive states relationship was stronger in females (boot effect=-1.18, boot SE= .02, 95% CI [-.23, -.14]) compared to males (boot effect=-1.13, boot SE= .02, 95% CI [-.16, -.09]).

For H3, we tested the conditional indirect effect of trait emotional intelligence on depression via life satisfaction as a function of majors (non-STEM and STEM). Table 5

displays the moderated mediation regression estimates and direct and conditional indirect effects.

**Table: 5**  
**Results of Moderated Mediation Analysis by Major (N=844)**

Predictor	B	SE	t	P
LS (R <sup>2</sup> =.35)				
Constant	-2.01	.41	-4.85	.00
CGPA	.063	.06	1.02	.30
Trait EI	1.27	.08	15.78	.00
Major	.42	.55	.77	.42
Trait EI * Major Interaction	-.05	.12	-.46	.64
Depression(R <sup>2</sup> =.50)				
Constant	2.6197	.1022	25.6406	.0000
CGPA	-.0166	.0181	-.9141	.3609
Trait EI	-.3058	.0215	-14.1938	.0000
LS	-.1087	-.0128	-8.4741	.0000
Major	0844	.0727	1.1615	.2458
LS * Major Interaction	-.0224	.0165	-1.3542	.1760
Conditional Indirect Effect of Trait EI on depression via LS on major categories				
Major	Boot Indirect Effect		Boot SE	Boot LLCI
STEM	-.14		.02	-.18
Non-STEM	-.16		.02	-.20
Mediator	Index of Moderated Mediation			
LS	-.0214		.0276	-.0745
				.0319

Table 5 shows that neither the first- or second-stage moderation effects were significant. Likewise, the index of the moderated mediation was not significant (Index=-.02, boot SE=.02, 95% CI [-.07, .03]). This suggests that the mediating effect of life satisfaction was not contingent upon STEM and non-STEM majors. On the other hand, the bootstrap for confidence levels for the conditional indirect effects of life satisfaction were both significant for STEM (boot SE= .02, 95% CI [-.18, -.10]) and non-STEM (boot SE= .02, 95% CI [-.20, -.12]) majors. These findings comment that the magnitude of the mediating effect of life satisfaction on trait emotional intelligence-depression linkage did not vary by STEM and non-STEM majors.

Although not hypothesised, additional moderated mediation analyses for the conditional influence of gender within STEM and non-STEM majors, separately, were conducted. Initially, for non-STEM major sample (N=446), the index of the moderated mediation was not significant (Index=-.02, boot SE= .04, 95% CI [-.05, .10]). For the STEM sample, the mediating impact of life satisfaction on trait emotional intelligence-depressive symptoms relationship was not varied by gender. Nevertheless, for the non-STEM major sample, the index of the moderated mediation was significant (Index=.09, boot SE=.04, 95% CI [.01, .17]). Table 6 displays the estimates of the moderated mediation regressions.

**Table: 6**  
**Results of Moderated Mediation Analysis by Gender in non-STEM Sample (N=398)**

Predictor	B	SE	t	P
LS (R <sup>2</sup> =.36)				
Constant	-1.61	.59	-2.71	.01
CGPA	-.17	.08	-1.88	.06
Trait EI	1.39	.12	12.55	.00
Gender	1.74	.81	2.15	.03
Trait EI * Gender Interaction	-.41	.17	-2.33	.02
Depression(R <sup>2</sup> =.50)				
Constant	2.79	.15	18.08	.00
CGPA	-.04	.02	-1.52	.12
Trait EI	-.29	.03	-8.88	.00
LS	-.15	.02	-7.94	.00
Gender	-.18	.11	-1.57	.11
LS * Gender Interaction	.03	.02	1.16	.25
Conditional Indirect Effect of Trait EI on depression via LS by Gender				
Gender	Boot Indirect Effect		Boot ULCI	
Female	-.209		-.151	
Male	-.119		-.056	
Mediator	Index of Moderated Mediation			
LS	.089	.043	.005	.174

To conclude, the magnitude of life satisfaction as a mediating factor on trait emotional intelligence-depression linkage varied by gender, particularly within the non-STEM major sample. As shown in Table 6, the bootstraps for confidence levels for the conditional indirect effects of life satisfaction were significant for each gender. However, the magnitude of mediating influence of life satisfaction on trait emotional intelligence-depression relationship was stronger in females (boot effect=-.21, boot SE= .03, 95% CI [-.27, -.15]) compared to males (boot effect=-.12, boot SE= .04, 95% CI [-.19, -.05]).

## 6. Concluding Comments and Implications

This research is designed to shed light on the potential effects of trait emotional intelligence on Gen Z's depression levels. The study has four main theoretical contributions. First, this research was specifically designed to examine the crucial impact of life satisfaction on the link between trait emotional intelligence and depression for Gen Z students. The indirect impact of trait emotional intelligence on depression via life satisfaction was noted for Gen Z. The findings demonstrate a framework indicating that high trait emotional intelligent Gen Zers are inclined to sustain high life satisfaction, which would cause to decrease any possible depressive symptoms. The present study contributes to the positive psychology movement (PPM) theory (Seligman & Csikszentmihalyi, 2000). According to PPM theory, an understanding of human strengths (i.e., trait emotional intelligence influence via life satisfaction) can help prevent or lessen the damage of depression, stress and disorder (Gable & Haidt, 2005). Thus, by the positive influence of Gen Zers' trait emotional intelligence on their life satisfaction, Gen Zers may experience less disruptive feelings such as depression.

The second contribution of the study is investigating the direct relationships among the study variables. Consistent with the previous research, the present study supports the

direct positive effect of trait emotional intelligence on life satisfaction (Palmer et al., 2002) and the negative effect of the former on depression (Fernandez-Berrocal et al., 2006). Satisfaction with life is heavily influenced by favourable emotional intelligence. Gen Zers with high trait emotional intelligence have immense potential to be aware of, comprehend, regulate, and direct their emotions, leading to higher levels of life satisfaction. High trait emotional intelligence involves a high ability to discriminate clearly among feelings and regulate emotional states (Hansenne & Bianchi, 2009). Gen Z students who pay greater attention to their own emotions show poor symptoms of depression.

Furthermore, in line with the previous research (Mahmoud et al., 2012), the findings support the direct negative effect of life satisfaction on depression. People who are satisfied with their lives are generally well adapted to their environment and are free from depressive symptoms. The importance of such an outcome lies in its obvious connection to a positive (i.e., life satisfaction) or negative state of subjective well-being.

Third, we also aimed to examine the existence of gender differences on the mediating impact of life satisfaction on the linkage between Gen Zers' trait emotional intelligence and depressive symptoms. In line with the previous research (Cooper & Petrides, 2010), the magnitude effect of life satisfaction on trait emotional intelligence-depression linkage is more substantial for females than males. This might be because females' development is less tied to autonomy and individualism, and females are more focused on interpersonal relations than males. Thus, females with low trait emotional intelligence are less likely to have moral, internal control and life satisfaction and have higher depressive symptoms than males (Naghavi et al., 2012).

Finally, the present study investigated whether the proposed model was contingent upon significant fields of study. In previous research by Sanchez-Ruiz et al. (2010), females in non-STEM majors scored higher on emotional intelligence than males. Contrary to the expectations, the mediating effect of Gen Zers' life satisfaction on the relationship between their trait emotional intelligence and depression was not contingent on STEM and non-STEM major fields. Then we conducted a supplementary analysis by separating the majors and testing the moderating gender effect on the proposed mediation relationship. Although the mediating effect of life satisfaction on trait emotional intelligence-depression linkage was not varied by gender for the STEM sample, the findings suggest that in non-STEM majors, Gen Z females feel the mediating influence to a greater extent than males.

This study offers some practical implications for managers, Human Resource (HR) professionals, career counselling practitioners and higher education institutions, who should have a comprehensive understanding of the factors that influence Gen Zers' depression levels, as depression has negative effects on job performance (Lerner & Henke, 2008), job satisfaction (Bradley & Roberts, 2004) and academic performance (Owens et al., 2012).

Since Gen Z is the youngest generation in the workforce, organisations should be ready for this generation. As Gen Zers' trait, emotional intelligence profiles can provide



valuable input into their life satisfaction and depression; the study's findings suggest that employers incorporate emotional intelligence knowledge into HR planning. When the relationships between trait emotional intelligence and life satisfaction are empirically substantiated for Gen Zers, a logical next step for implication will be to develop adaptive training and remedial programs that enhance Gen Zers' emotional abilities. Organisations can include activities related to increasing the necessary aptitudes for emotional intelligence, which then would increase the life satisfaction of Gen Z.

Career counselling practitioners should also consider the probable impact of trait emotional intelligence while making suggestions to Gen Zers related to their prospective occupation by assuming the role of life satisfaction and job engagement (Brown & Ryan, 2003). For higher education institutions, establishing Gen Zers' trait emotional intelligence profiles in major academic fields can also help achieve congruence between this generation's characteristics and their chosen field of study. Such agreement, in turn, may enhance Gen Zers' academic achievement and result in successful professional development. Finally, this study has implications for the academicians who wish to understand Gen Zers' trait emotional intelligence profiles that may help to boost Gen Zers' motivation and develop appropriate reinforcements with effective training modes. Knowledge of trait emotional intelligence may support Gen Zers in satisfying lifelong judgments that align with their emotional personality characteristics. These types of reviews may be considered by making life decisions consistent with their affective dispositions. Such decisions can be taken in the context of academicians via extracurricular activities (Petrides & Furnham, 2006) and can positively impact Gen Zers' life satisfaction.

The study findings have some limitations. First, the generalizability of the study may be restricted since the study was carried out in Turkey. In this sense, gathering data from only one national context may limit the generalizability of the results. Future studies from other countries with different characteristics would verify the results and thus provide generalizability. Another limitation is the perceptions of the study group of this research, as their notions of themselves may differ from what they aim or how they act.

Consequently, to further elaborate the study findings, qualitative research, including interviews and/or observation data, can be conducted with Gen Zers having diverse cultural backgrounds. Third, participants' assessments were collected at a single time, rather than observing the changes in various time frames. This may hinder the comprehension of the factors that may depend on time. In this respect, longitudinal research design can be conducted in the future. Finally, although the current study was limited in its reliance on self-report measures, this perspective of evaluating the self-assessments of trait emotional intelligence can still be a useful tool (Petrides & Furnham, 2006) as a relatively easy way to predict psychological adjustments such as life satisfaction and depression.

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