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## Research Article

# Mattering and Satisfaction with Life: Gender and Age Differences Among Kenyan Secondary School Students

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This study focused on how mattering correlated with school life satisfaction among 446 high school students aged 15 to 23 ( $M_{age} = 17.40$ ,  $SD = 1.22$ ; 55.8 % Male) drawn from 12 secondary schools in Murang'a County Kenya. More than two thirds of our sample (69.3 %) were in middle adolescence ( $M_{age} = 16.76$ ,  $SD = 0.53$ ; range 15–17 years). The results revealed a significant moderate correlation between mattering and school life satisfaction. Both age and mattering explained 11 % variance in satisfaction with school life. Both age and gender did not interact with mattering in predicting satisfaction with school life. Although the pattern of correlation was similar for the middle and late adolescent groups, the prediction was only significant among the middle adolescent group. No significant gender differences were reported among the study variables. The findings suggest that when students feel important and when their age is taken into account, they are more likely to have higher levels of satisfaction with their school experience.

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## 1. Introduction

For close to three years, the COVID-19 pandemic disrupted all the pre-pandemic patterns of school life prompting adaptation to new realities like lockdowns, restrictions, and online or remote learning activities<sup>[1]</sup>. Over that period, the pandemic not only threatened our quality of life<sup>[2]</sup> but it also threatened our social fabric, routines, lifestyles and all aspects of mental health<sup>[3][1]</sup>.

There is abundance of evidence that COVID-19 led to a widespread decline in wellbeing<sup>[4][5]</sup>, aggravated by increased levels of anxiety, depression and distress (See metareview by Robinson et al.<sup>[6]</sup>). Across countries, COVID-19 occasioned a surge in isolation and loneliness among children and adolescents<sup>[7][8]</sup> and reduced learning behaviours and performance<sup>[4][9]</sup>. Isolation is linked to lower feelings of mattering and an elevated risk for negative mental health outcomes<sup>[10]</sup>. In addition, the *World Happiness Report* for years 2021 and 2022<sup>[2][11]</sup> reveal crucial variance in overall life satisfaction before, during, and after COVID-19.

Promoting student wellbeing has become a global educational priority<sup>[12]</sup> and this reflected in the inclusion of socioemotional variables in international assessments like PISA<sup>[13]</sup>. Since school satisfaction is a

key indicator of student wellbeing<sup>[12]</sup>, understanding its relation to other student characteristics is crucial<sup>[14]</sup>. Research shows that students' satisfaction with school life correlates with important outcomes like happiness, commitment, learning speed, discipline, and adjustment<sup>[15][16][17]</sup>. On the other hand, dissatisfaction with school life is linked with negative academic outcomes like aggression, increased indiscipline, school dropout, a higher risk for academic failure, changes in academic and career plans, as well as poor transition outcomes (e.g.<sup>[18][19][5][20]</sup>). Evidence from several countries in the West shows that COVID-19 lowered the life satisfaction of young people aged 15 to 30 more than that of adults aged 31 to 60<sup>[21][22]</sup>. A focus on the link between mattering and life satisfaction among adolescents is important owing to first, the protective role of feelings of mattering in students' wellbeing in the post-COVID-19 contexts (e.g.<sup>[23][24][25]</sup>) and second, the strategic role the school context plays in meeting students' mattering need<sup>[26][27]</sup>.

Conceptualized by the mattering and marginality theory as the natural feeling of being valuable and important to others<sup>[28][16]</sup> mattering is considered as a formidable 'psychological shield' to a person faced with stress and distress<sup>[19]</sup>. Thus, in the post-COVID-19 context, mattering is expected to be a crucial source of resilience and adaptability to students in their coping with the disruptions and psychological consequences of the pandemic<sup>[10][19][29]</sup>. Studies done among students either during or after the pandemic in countries as diverse as China, Italy, Malaysia and the United Kingdom linked mattering to positive outcomes like positive self-appraisals, satisfaction with life and overall well-being among students<sup>[30][23][24][31]</sup>. In contrast, anti-mattering was linked to increased vulnerability to stress, depression, and anxiety and this may be deleterious to life satisfaction<sup>[30][23][24]</sup>. Therefore, we hypothesized that mattering would positively correlate with school life satisfaction among secondary school students (H1).

A recent summary of eight research articles focusing on mattering<sup>[32]</sup> proposed that mattering is not only developmental in nature but it is also an essential component in how people define themselves. The default expectation is that, holding all factors constant, mattering ought to increase with age<sup>[33]</sup>. In fact, just like the pioneer research on mattering<sup>[34]</sup>, current evidence<sup>[19]</sup> supports the differentiation of the construct by age with adolescents recording lower levels of it than adults. This trend sits well with the

view of mattering as increasing through adulthood (probably owing to the close link between mattering and generativity<sup>[35][19]</sup>). However, some evidence points to either a negative correlation between mattering and age, or at levels of mattering not interacting with age in establishing wellbeing<sup>[30]</sup>. These mixed findings reinforced the need to examine the links between mattering and age. We, therefore, hypothesized that age was correlated with mattering (H2a). We did not formulate any hypothesis on differences in mattering between middle and late adolescents.

In existing studies, students' wellbeing has been conceptualized through hedonic and eudaimonic lenses. The hedonic perspective emphasizes happiness and pain avoidance, focusing on cognitive and emotional aspects<sup>[36][37]</sup>. It views wellbeing as comprising of both life satisfaction and the balance of positive and negative affect<sup>[38][39]</sup>. In this view, a satisfied student experiences greater happiness and minimal negative emotions<sup>[14][12]</sup>. In contrast, the eudaimonic perspective defines wellbeing in terms of optimal functioning and outcomes, such as school engagement<sup>[40]</sup>. This study is aligned to the hedonic view, which holds that life satisfaction is a critical component of young people's overall wellbeing in educational contexts<sup>[14][10][15][12][41][17]</sup>.

Under the hedonic perspective, Diener et al.'s<sup>[42]</sup> conceptualization of satisfaction with life is the most popular measure of happiness. Some authors have argued that this form of satisfaction with life is more focused on aspects of personal achievement and attainment<sup>[12][43][44]</sup>. Kyrs et al.<sup>[43]</sup> have even shown country-specific differences in satisfaction with life. Similarly, the 2024 World Happiness Report further illuminate this dynamic, revealing alarming trends: young individuals aged 15 to 24 in the West are experiencing a pronounced decline in happiness compared to older adults, pointing to the role of age in these disparities<sup>[45][21]</sup> while Central and Eastern Europe, the former Soviet Union, and East Asia recorded substantial increases in happiness across all ages. In contrast, happiness has fallen at every age in South Asia, the Middle East, and North Africa. Among elementary school students in China<sup>[46]</sup>, older students had lower levels of subjective wellbeing than younger ones and girls had higher levels of school satisfaction than boys. This contradicts earlier assertions that older adolescents seemed happier than younger ones<sup>[47]</sup>. The reviewed literature primes us to expect that age is related to satisfaction with school life (H2b) and to

hypothesize that age moderates the relationship between mattering and satisfaction with school life (H2c). Such trends compel a deeper exploration of how factors like mattering can influence both life satisfaction and happiness, particularly in the post-COVID-19 landscape, where disruptions to social and educational structures may exacerbate existing inequalities<sup>[24][19]</sup>.

Linked to the developmental nature of mattering, is the idea that gender, as a crucial aspect of self-concept, is an important dimension for differences in how mattering relates to mental health<sup>[48][32]</sup>. In fact, there is ample evidence that women tend to have a greater sense of mattering compared to men<sup>[49][50]</sup>. However, this difference seems not to hold across cultures. In more non-egalitarian cultures, men often have higher mattering scores than women (e.g. in Iran<sup>[51]</sup>; in Pakistan<sup>[52]</sup>). We, therefore, found it important to explore whether gender moderated the relationship between mattering and life satisfaction among Kenyan high school students. Since most Kenyan communities are mainly patriarchal<sup>[53][54]</sup>, we hypothesized that the male students would have higher mattering scores than female students (3a).

As per the World Happiness Report 2024, in higher income countries, girls consistently report lower levels of satisfaction with life than boys<sup>[45]</sup>. This is consistent with findings from school attendees in Luxembourg<sup>[55]</sup> and a recent metanalysis<sup>[56]</sup>. However, the popular finding has been that females consistently report higher satisfaction with life than males<sup>[57][58][59][60]</sup>. This seems to hold even in rural Kenya<sup>[61]</sup> despite there being reports of sub-Saharan African men having higher satisfaction with life than women<sup>[58]</sup>. We, therefore, expected gender differences in satisfaction with school life with female students being more satisfied with school life than male students (H3b) and that gender would significantly moderate the relationship between mattering and satisfaction with life (H3c).

This study contributes to the literature in two important ways: First, a focus on students' satisfaction with school life heeds the calls for more research on this among African samples<sup>[62][63][64]</sup>. Second, the rapid growth of the field of mattering coupled with the increasingly popular view of mattering as a core universal need<sup>[24][19]</sup> call for more empirical evidence from different countries around the world. Despite the unavailability of cross-cultural studies on mattering, there is a growing pool of evidence from Australia,

Canada, China, Great Britain, Italy, Israel, Japan, and South Korea among others speaking to the possible universality of the construct (see Flett<sup>[19]</sup> for review). We added to this pool by studying mattering among Kenyan high school students, a population that is largely underrepresented in mattering literature.

## 2. Materials and Methods

### 2.1. Participants

Our sample comprised of 446 high school students aged between 15 and 23 years ( $M = 17.40$ ,  $SD = 1.22$ ; 55.8 % Male) drawn from 12 secondary schools in Murang'a County, Kenya. The students were all in form three (the third year of high school). We used a stratified random sampling method to ensure a representative selection from the schools, taking into account factors such as gender and age distribution.

To categorize our participants' ages (range = 15 to 23), we grouped them into two using the popular psychosocial developmental classification<sup>[47][65]</sup>: middle adolescents (14-17 years) and late adolescents (18-25 years) (see Table 1). Majority (69.3 %) were middle adolescents ( $M_{age} = 16.76$ ,  $SD = 0.53$ ; range 15-17 years). Within this sub sample, 168 participants (54.4 %) were male ( $M_{age} = 16.75$ ,  $SD = 0.47$ ; range 15-17 years) while 141 were female ( $M_{age} = 16.78$ ,  $SD = 0.59$ ; range 15-17 years). The late adolescence group had 137 participants ( $M_{age} = 18.85$ ,  $SD = 1.08$ ; range 18-23 years) out of whom 81 were male (59.1 %;  $M_{age} = 18.96$ ,  $SD = 1.11$ ; range 18-23 years) and 56 were female ( $M_{age} = 18.68$ ,  $SD = 1.03$ ; range 18-22 years). Overall, late adolescents were significantly older ( $t_{(444)} = -27.29$ ,  $p = <.001$ ) than the middle adolescents. Importantly, students' ages did not differ significantly by gender across the subsamples.

Prior to data collection, we obtained a research permit from the National Commission for Science, Technology and Innovation (NACOSTI/P/23/25950). Informed consent was obtained from all participants and their school principals, ensuring that they understood the study's purpose, procedures, and their right to withdraw at any time without any negative consequences. Additionally, we ensured the confidentiality and anonymity of all participants by assigning unique identification codes and securely storing the data

## 2.2. Measures

### *The General Mattering Scale*

We used the General Mattering Scale (GMS<sup>[28]</sup>), a unidimensional measure consisting of 5 items assessing one's perceived significance to others. Participants are required to rate their level of agreement to the items using a 4-point Likert scale ranging from 1 = *not at all* to 4 = *a lot*. The scale is the most popular measure for mattering and it has been found to be reliable across different countries (see Flett<sup>[19]</sup> for a review) and when used among students (see Flett & Heisel<sup>[30]</sup>). Higher scores indicated greater perceived mattering. The scale had sufficient degree of reliability ( $\alpha = .60$ ) across gender and age groups.

### *Students' Life Satisfaction Scale*

Students responded to the 7-item Life Satisfaction Scale<sup>[66]</sup> on a scale of 1 = *strongly disagree* to 6 = *strongly agree*. Two items were reverse coded. To calculate the overall life satisfaction score, we followed these steps: Each participant's responses to the seven items were recorded and the individual scores for each item were summed, resulting in a total score that could range from 7 to 42. To obtain the mean score for life satisfaction, the total score was divided by the number of items (7), resulting in means with a theoretical range of 1 to 6. The scale has good reliability across countries, age and gender<sup>[66][67]</sup>. In this study, the scale had adequate reliability ( $\alpha = .70$ ) and this was consistent across gender and age groups.

## 3. Data analyses and results

		Middle Adolescence				Late Adolescence				Total			
Variable	Statistic	Male	Female	Total	t	Male	Female	Total	t	Male	Female	Total	t
n		167	140	307		82	57	139		249	197	446	
Age	M (SD)	16.75 (0.47)	16.78 (0.59)	16.76 (0.53)	-0.14	18.96 (1.11)	18.68 (1.03)	18.85 (1.08)	1.23	17.47 (1.28)	17.32 (1.13)	17.40 (1.22)	1.30
	Range	15-17	15-17	15-17		18-23	18-22	18-23		15-23	15-22	15-23	
	Sk	-1.48	-1.59	-1.52		1.32	1.42	1.33		1.34	1.48	1.41	
	Kr	1.06	1.53	1.23		1.36	1.06	1.16		2.14	3.09	2.51	
Mattering	M (SD)	14.28 (3.18)	14.19 (2.81)	14.23 (3.04)	0.25	14.87 (2.96)	14.94 (3.14)	14.92 (2.95)	0.12	14.47 (3.12)	14.41 (2.92)	14.44 (3.03)	0.23
	Range	5-20	6-20	5-20		7-20	7-20	7-20		5-20	6-20	5-20	
	Sk	-0.46	-0.34	-0.41		-0.52	-0.28	-0.41		-0.49	-0.28	-0.40	
	Kr	-0.10	0.13	-0.00		0.13	-0.43	-0.16		-0.04	-0.08	-0.06	
	$\alpha$	.63	.56	.60		.56	.65	.60		.60	.60	.60	
SWL	M (SD)	3.33 (1.08)	3.34 (1.05)	3.33 (1.07)	0.12	3.62 (0.97)	3.40 (0.99)	3.56 (0.97)	1.29	3.43 (1.06)	3.36 (1.03)	3.40 (1.05)	0.64
	Range	1.00- 5.43	1-5.43	1.00- 5.43		1.00- 5.86	1.00- 5.14	1.00- 5.86		1.00- 5.86	1.00- 5.43	1.00- 5.86	
	Sk	-0.23	-0.40	-0.31		-0.46	0.31	-0.39		-0.32	-0.38	-0.35	
	Kr	-0.70	-0.65	-0.69		0.32	-0.54	-0.11		-0.46	-0.62	-0.53	
	$\alpha$	.72	.70	.71		.64	.68	.66		.70	.70	.70	

**Table 1.** Descriptive Statistics and Reliability Across the Gender and Age Groups

Note. N = 446. SWL = satisfaction with school life; Sk =skewness, Kr = kurtosis.

Table 1 presents the means and standard deviations of the variables of interest across gender and age groups. Our data indicates that the average of scores in the General Mattering Scale was 14.44 ( $SD = 3.03$ ). The satisfaction with school life scores had a mean of 3.40 ( $SD = 1.05$ ). The skewness and kurtosis coefficients for both mattering and satisfaction with school life were within the range of  $\pm 1$  meeting the criteria for a normal distribution across the sub samples<sup>[68]</sup>. We thus tested the study hypotheses using parametric tests since the variables met the criteria for normal distributions.

We performed correlational analysis to test the hypotheses on the relationship between mattering and satisfaction with school life (H1), age and mattering (H2a) as well as between age and satisfaction with school life (H2b). These correlations were evaluated across gender and age groups (Table 2). Differences in the correlation coefficient values across gender and age groups were tested using the Fishers Z- Transformation test. To test for gender differences in the variable means (H3a and 3b), we used independent samples t-test (See Table 2). To verify moderation effects of age (H2c) and gender (H3c) a multiple regression analysis was performed (see Table 3).

	Male			Female			Total		
Variable	<i>r</i>			<i>r</i>			<i>r</i>		
	GM	Age	SWL	GM	Age	SWL	GM	Age	SWL
Middle Adolescence (12-17 years)									
<i>n</i>	167	140	307						
1. GM	-			-			-		
2. Age	-.07	-		-.09	-		-.08	-	
3. SWL	.31**	.06	-	.32**	.11	-	.32**	.08	-
Late Adolescence (18-23 Years)									
<i>n</i>	82	57	139						
1. GM	-			-			-		
2. Age	-.02	-		-.08	-		-.05	-	
3. SWL	.24*	.04	-	.12	.07	-	.19*	.06	-
Overall Sample									
<i>N</i>	249	197	446						
1. GM	-			-			-		
2. Age	.05	-		.04	-		.05	-	
3. SWL	.31**	.13*	-	.26**	.08	-	.28**	.11*	-

**Table 2.** Correlation Disaggregated by Gender and Age Categories

Note. *N* = 446. GM = general mattering; SWL = satisfaction with school life.

\**p* < .05; \*\* *p* < .01.

### Correlations Between Mattering, Age, and Satisfaction With School Life

As shown in Table 2, we found a significant moderate positive correlation between general mattering and satisfaction with life ( $r = .28, p < .01$ ). This correlation was slightly stronger among male students ( $r = .31, p < .01$ ) compared to female students ( $r = .26, p < .01$ ); however, the difference was not statistically significant ( $z = 0.42, p = .34$ ). Among late adolescents, the correlation was significant and higher for male students ( $r = .24, p < .05$ ) than for female students ( $r = .12, p > .05$ ), but this difference was also not statistically significant ( $z = 0.69, p = .25$ ). In contrast, among middle adolescents, the correlation was nearly identical for male ( $r = .31, p < .01$ ) and female participants ( $r = .32, p < .01$ ).

When comparing age categories, the correlation was stronger among middle adolescents ( $r = .32, p < .01$ ) than late adolescents ( $r = .19, p < .05$ ), although this difference was not significant ( $z = 1.32, p = .09$ ). Overall, across the subsamples, the correlation between mattering and satisfaction with school life was consistently positive and significant, except for late adolescent girls, providing robust evidence to support Hypothesis 1 (H1). We conclude that as students' sense of mattering increases, their satisfaction with school life also improves.

In our study, age did not correlate with mattering, which was contrary to our expectations outlined in Hypothesis H2a. However, a significant positive correlation was observed between age and satisfaction with life ( $r = .11, p = .02$ ), albeit a weak one. This correlation was evident among male students ( $r = .13, p = .04$ ) but diminished among female students ( $r = .08, p = .29$ ). Across the subsamples, the difference was not statistically significant ( $z = 0.6, p = .27$ ). These findings

align with our expectation that age is positively correlated with satisfaction with school life, supporting Hypothesis H2b.

### *Gender differences in the study variables*

In line with hypothesis H3a, male students had a higher mean in mattering and contrary to hypothesis H3b, female students had lower scores in satisfaction with school life (see Table 1). In fact, on average, male students had total general mattering scores that were 0.06 points higher and total satisfaction with life scores that were 0.08 points higher than female students respectively. However, the gender differences in mattering ( $t_{(444)} = 0.23, p = .82$ ) and satisfaction with school life ( $t_{(444)} = 0.64, p = .52$ ) were not statistically significant. Thus our data did not support both hypotheses 3a and 3b.

### *Age differences in the study variables*

Though not part of the key objectives of the study, we explored how the participants' scores for the study variables differed among the early and late adolescents. As shown in Table 1, the late adolescent group had higher means in age, general mattering and satisfaction with life. Notably, these differences were significant for age ( $t_{(444)} = -27.29, p = <.001$ ) and general mattering ( $t_{(444)} = -2.16, p = .03$ ).

### *Moderation effect of age and gender in the relationship between mattering and satisfaction with life*

Through regression analysis, we tested how mattering predicted satisfaction with school life moderated by age (H2c) and gender (H3c) as shown in Table 2.

Variable	Model 1				Model 2			
	B	$\beta$	SE	95 % CI	B	$\beta$	SE	95 % CI
Constant	0.02		.07	[-0.11,0.15]	0.02		.06	[-0.11, 0.15]
Gender	-0.05	-.02	.10	[-0.25, 0.15]	-0.05	-.02	.10	[-0.23, 0.14]
Age	0.09	.11*	.04	[0.01, 0.17]	0.09	.10*	.04	[0.01,0.16]
Mattering					0.10	.29**	.02	[0.06, 0.14]
Mattering X Gender					-0.02	-.05	.01	[-0.04, 0.10]
Mattering X Age					-0.01	-.02	.32	[-0.07, 0.05]
$R^2$	.01					.09		
$\Delta R^2$						.08**		

**Table 3.** Regression Coefficients of General Mattering on Satisfaction with School Life

Note.  $N = 446$ . In model 1, we entered the control variables of age and gender to predict students' satisfaction with school life. In Model 2, we entered mattering as a predictor together with its interactions with age and gender.

\* $p < .05$ ; \*\*  $p < .01$ .

Our findings revealed that the model predicting satisfaction with school life based on age and gender (Model 1) was marginally non-significant ( $F(2, 443) = 2.87, p = .06$ ), with age explaining only 1% of the variance ( $R^2 = .01$ ) in satisfaction with school life. While age emerged as a significant predictor ( $\beta = .11, p < .05$ ), gender was not a significant predictor ( $\beta = -.02, p > .05$ ).

The inclusion of mattering and interaction terms in Model 2 resulted in a significant improvement ( $F(5,$

$440) = 8.90, p < .01$ ). The change in  $R^2$  for Model 2 was also significant ( $\Delta R^2 = .08, F(3, 440) = 12.86, p < .01$ ). Both age ( $\beta = .10, p = .03$ ) and mattering ( $\beta = .29, p < .01$ ) significantly predicted satisfaction with school life, with mattering contributing nearly three times as much as age. For each standard deviation increase in age and mattering, satisfaction with school life increased by approximately 0.09 and 0.10 points, respectively. Notably, neither gender nor age interacted with mattering in predicting satisfaction with school life.

Given that late adolescents scored significantly higher in mattering and were older than their middle adolescent counterparts, we examined the regression relationship between mattering and satisfaction with school life across the different age categories (see Table 4)



	Variable	Middle Adolescence						Late Adolescence					
		B	SE	$\beta$	t	p	95% CI	B	SE	$\beta$	t	p	95% CI
Model 1	(Constant)	3.43	.11		30.89	.00	[3.21, 3.65]	3.56	.16		21.60	.00	[3.24, 3.89]
	Gender	.01	.12	.01	.10	.92	[-0.23, 0.25]	-.21	.17	-.11	-1.23	.22	[-0.56, 0.13]
	Age	.16	.12	.08	1.40	.16	[-0.06, 0.39]	.04	.08	.05	.54	.59	[-0.11, 0.20]
	$R^2$	.06			.02								
	F	1.00			0.98								
	$\Delta R^2$	.06			.02								
	$\Delta F$	1.00			1.01								
Model 2	(Constant)	1.76	.53		3.33	.00	[0.72, 2.80]	2.31	.92		2.50	.01	[0.48, 4.14]
	Gender	.03	.12	.01	.23	.82	[-0.20, 0.25]	-.20	.17	-.10	-1.15	.25	[-0.54, 0.14]
	Age	.22	.11	.11	1.97	.05	[0.00, 0.43]	.05	.08	.05	.63	.53	[-0.11, 0.20]
	GM	.12	.04	.34	3.26	.00	[0.05, 0.19]	.08	.06	.26	1.36	.17	[-0.04, 0.20]
	GM x Age	.02	.05	.04	.43	.67	[-0.07, 0.11]	.00	.03	-.02	-.10	.92	[-0.06, 0.06]
	GM x Gender	.02	.04	.03	.40	.69	[-0.06, 0.09]	-.04	.06	-.08	-.68	.50	[-0.16, 0.08]
	$R^2$	.11			.06								
	F	7.50***			1.52								
	$\Delta R^2$	.10			.04								
	$\Delta F$	11.77***			1.85								

**Table 4.** Regression Examining the Association of General Mattering and Satisfaction with School Life across the Age categories

Notably, the model predicting satisfaction with school life from age and gender was not significant for both early and late adolescents. However, upon adding mattering and its interaction with age and gender in model 2, the model was significant with age and mattering accounting for 10 % increase in students' satisfaction with school life. In this study, among the early adolescents, the degree of variance in satisfaction with school life as accounted for by mattering was slightly over three times ( $\beta = .34$ ,  $p = <.0001$ ) that accounted for age ( $\beta = .11$ ,  $p = .05$ ). Thus, for every standard deviation increase in early adolescents' age and mattering, their satisfaction with school life significantly increased by 0.11 and 0.34 points respectively. This contrasts the pattern among late adolescents where, although not significantly so, variance in satisfaction with school life was slightly

over five times more likely to be explained by mattering ( $\beta = .26$ ,  $p = .17$ ) than age ( $\beta = .05$ ,  $p = .53$ ). Notably, mattering's interactions with both age and gender were not significant in its relationship with satisfaction with school life, as was the case in the overall regression model (Table 3).

## 4. Discussion

In this study, we investigated the relation between mattering and satisfaction with school life among Kenyan high school students, majority of whom were in middle adolescence. We hypothesized that mattering would correlate with age and satisfaction with school life. We further expected females to have higher scores in both mattering and satisfaction with school life and that both age and gender would moderate how mattering correlated with satisfaction with school life.

We found that mattering correlated positively with school life satisfaction ( $r = .28, p < .05$ ) and that this relationship held across the sub samples except for late adolescent females. This supports the mattering and marginality theory, which asserts that a sense of being valued by others acts as a psychological shield against stress, particularly in the post-COVID-19 context<sup>[49]</sup>. This is consistent with previous research conducted among college students in diverse contexts, including South Korea<sup>[69]</sup>, the United States<sup>[70]</sup>, and Ghana<sup>[63]</sup>, as well as studies involving high school students in Canada<sup>[71]</sup> and Michigan, USA<sup>[66]</sup>. The literature shows that mattering is linked to various positive outcomes, including satisfaction with life and overall well-being<sup>[30][23][24]</sup>, reinforcing our hypothesis (H1) that mattering positively correlates with satisfaction with school life.

Following the recommendation by Shapiro et al.<sup>[72]</sup>, we disaggregated the correlation between mattering and satisfaction with school life by gender. Interestingly, we found that the correlation between mattering and satisfaction with school life was stronger among male students than female students, although this difference was not statistically significant. This aligns with the findings from prior studies in non-egalitarian societies<sup>[51][52]</sup> where male students exhibited higher levels of mattering. However, our results contrast with research indicating that women often report greater levels of mattering<sup>[49][50]</sup>, suggesting that cultural factors may influence these gender differences. This suggests the need for future studies to keep on examining how gender interacts with both mattering and satisfaction with life.

Gender differences in mattering were consistent with the prediction that male students would have higher scores (H3a). This is consistent with research conducted in non-egalitarian societies such as Iran<sup>[51]</sup> and Pakistan<sup>[52]</sup> where men have been found to have higher mattering scores than women. However, the result was inconsistent with the prior research that reported women as having a greater sense of mattering compared to men<sup>[49][50]</sup>. In testing for gender differences in satisfaction with school life, contrary to our expectation (Hypothesis 3b), we found that male students had non-significantly higher scores in satisfaction with school life. This agrees with past research<sup>[55][56][35]</sup> that found girls to be less satisfied with life than boys. Although our finding is in line with prior evidence that sub-Saharan African men have higher satisfaction with life than women<sup>[58]</sup>, it

contrasts the popular finding, that women, even in rural Kenya<sup>[61]</sup>, consistently report higher levels of satisfaction with life than men<sup>[58][59]</sup>. The study adds more evidence on the heterogeneity of findings regarding gender differences in both mattering and satisfaction with life. Although the reasons for this inconsistency is not clear, our reviewed evidence revealed that results may or may not vary depending on the age of the respondents, culture sex and country in which the study is done<sup>[47][73][51][61][58][67][59][52]</sup>.

In this study, regression analysis revealed that students' age (but not gender), significantly predicted satisfaction with school life. This should warrant more scrutiny since both age and gender are important in experiencing satisfaction with life as well as in the manifestation of vulnerability in post COVID-19 contexts<sup>[74]</sup>. Notably, we found that among middle adolescents, mattering accounted for almost thrice as much variance as age in students' satisfaction with school life. However, among the late adolescents, although not significant, mattering explained slightly over five times the amount of variance accounted for by age in students' satisfaction with life compared to age. Previous findings among Kenyan high school students<sup>[75][64]</sup> have linked mattering to important markers of school adjustment. According to Flett et al.<sup>[32]</sup>, researchers have identified seven positive aspects of mattering which can improve satisfaction with school life as well as other mental health outcomes. Combined with our findings, it is apparent that, irrespective of gender and age, a student who feels significant and valued by others in school has a key inner resource that can increase their satisfaction with life at school. It is clear that mattering is central to wellbeing, as evidenced by both hedonic and eudaimonic life satisfaction (see review by Paradisi et al.<sup>[76]</sup>). That mattering significantly predicted satisfaction with life in middle rather than late adolescence remains intriguing. We may speculate that middle adolescents are more in need of social validation, more sensitive to peer approval, and more self-conscious than late adolescents. These characteristics are all linked to how adolescents construct their self-identity<sup>[77][78]</sup>. This is in line with the assertion by Flett et al.<sup>[32]</sup> that mattering is essential to how people define themselves. Their assertion that feeling important feeds positive emotions while not feeling important feeds negative emotions also hinted to a connection between mattering and adolescent life satisfaction.

## *Practical Implications*

This study underscores several important implications for educational practice:

First, given the significant role of mattering in enhancing students' satisfaction with school life, educational institutions should prioritize initiatives that cultivate a sense of belonging and significance among students. Such interventions should focus on creating an environment where every student feels valued and important. Second, our findings indicate that mattering is a more significant predictor of satisfaction than age, particularly among middle adolescents. Therefore, initiatives aimed at increasing students' satisfaction with school life should prioritize enhancing their sense of worth to others. Third, this study demonstrates that age, rather than gender, plays a crucial role in promoting satisfaction with school life. Interventions designed to improve secondary school students' educational experiences would benefit from being age-appropriate, as addressing the unique needs of different age groups can better support their psychological well-being. Fourth, while gender differences in mattering and satisfaction were not significant, educators should remain vigilant about the specific challenges faced by both girls and boys in diverse cultural contexts. Developing inclusive support systems that acknowledge and address the unique needs of each gender can help create a more equitable school environment, reducing potential disparities in satisfaction. Overall, our regression analysis reveals that when students feel important and their age is taken into account, they are more likely to experience higher levels of satisfaction with their school experience.

## *Limitations and Implications for Future Research*

This study had several notable limitations that may inform future directions for research. First, two-thirds of our sample were categorized as middle adolescents, which may affect the generalizability of our findings. Second, we focused exclusively on students in their third year of secondary school across 12 schools in Murang'a County, Kenya. Despite utilizing a relatively large sample, this may not fully represent the broader student population, and future research should address these potential sampling biases.

Third, our data collection relied solely on a questionnaire, and we did not account for the influence of school environments or the psychosocial climate at home and in the respective schools, which could affect the outcomes. Fourth, considering current evidence

that culture influences nearly all variables in this study<sup>[43][72]</sup>, it would be beneficial to investigate whether the association patterns observed here hold true across different cultures. Understanding how mattering relates to satisfaction with school life across all counties in Kenya remains an open question. Additionally, exploring these relationships in schools throughout East Africa and the wider African continent could provide valuable insights.

Fifth, the finding that mattering significantly predicted satisfaction with school life only among middle adolescents, and not late adolescents, remains unexplained. Future studies should aim to clarify this discrepancy. Finally, future research could also benefit from longitudinal studies that track changes in mattering and satisfaction with school life across different ages and educational stages. This approach would yield deeper insights into how these constructs evolve and inform targeted interventions over time.

## **5. Conclusion**

This study established a significant positive correlation between mattering and satisfaction with school life among Kenyan high school students, highlighting the critical role of mattering as a predictor of students' overall satisfaction. Notably, our regression analysis revealed that mattering emerged as a more substantial predictor than age, particularly among middle adolescents, suggesting that interventions aimed at fostering a sense of worth and belonging are essential for enhancing student well-being. While age demonstrated some influence on satisfaction levels, our findings emphasize that prioritizing students' feelings of significance can lead to improved satisfaction, irrespective of their age. Importantly, the lack of discernible gender differences in mattering and satisfaction highlights the necessity for inclusive practices that consider the diverse needs of all students within the educational environment. Overall, this study underscores the imperative for educational stakeholders to cultivate a culture of mattering within schools, as this not only enhances students' satisfaction with their educational experiences but also contributes to their overall psychological well-being. Future research should explore longitudinal approaches to understand how mattering and satisfaction evolve over time, further informing targeted interventions.

## Statements and Declarations

### Data Availability

The research data used to support the findings of this study are available from the corresponding authors upon request.

### Conflicts of interest

The authors declare that they have no conflict of interest.

### Funding statement

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## References

1. <sup>a</sup>Lee KT, Furukawa H. Exploring subjective happiness, life satisfaction, and sustainable luxury consumption in China and Japan amidst the COVID-19 Pandemic. *Administrative Sciences*. 13:169. doi:10.3390/admsci13070169.
2. <sup>a</sup>Helliwell JF, Layard R, Sachs JD, De Neve J-E, editor. *World happiness report, 2021*. New York: Sustainable Development Solutions Network; 2021. <https://worldhappiness.report/>.
3. <sup>a</sup>Aknin LB, De Neve J-E, Dunn EW, Fancourt DE, Goldberg E, Helliwell JF, Jones SP, Karam E, Layard R, Lyubomirsky S, Rzepa A, Saxena S, Thornton EM, VanderWeele TJ, Whillans AV, Zaki J, Karadag O, Ben Amor Y (2022). "Mental health during the first year of the COVID-19 pandemic: A review and recommendations for moving forward." *Perspectives on Psychological Science*. 17(4): 915-936. doi:10.1177/17456916211029964.
4. <sup>a</sup>Hurel C, Ehlinger V, Molcho M, Cohen JF, Falissard B, Sentenac M, Godeau E. Life satisfaction in the context of the COVID-19 pandemic among middle school adolescents in France: findings from a repeated cross-sectional survey (EnCLASS, 2012-2021). *Frontiers in Pediatrics*. 11:1204171. doi:10.3389/fped.2023.1204171.
5. <sup>a</sup>Neugebauer M, Patzina A, Dietrich H, Sandner M. Two pandemic years greatly reduced young people's life satisfaction: Evidence from a comparison with pre-COVID-19 panel data. *European Sociological Review*. 1-15. doi:10.1093/esr/jcad077.
6. <sup>a</sup>Robinson E, Sutin AR, Daly M, Jones A (2022). "A systematic review and meta-analysis of longitudinal cohort studies comparing mental health before versus during the COVID-19 pandemic in 2020." *Journal of Affective Disorders*. 296: 567-576. doi:10.1016/j.jad.2021.09.098.
7. <sup>a</sup>Roy AK, Breaux R, Sciberras E, Patel P, Ferrara E, Shroff DM, Cash AR, Dvorsky MR, Langberg JM, Quach J, Melvin G, Jackson A, Becker SP (2022). "A preliminary examination of key strategies, challenges, and benefits of remote learning expressed by parents during the COVID-19 pandemic." *School Psychology (Washington, D. C.)*. 37(2): 147-159. doi:10.1037/spq0000465.
8. <sup>a</sup>Shanahan L, Steinhoff A, Bechtiger L, Murray AL, Nivette A, Hepp U, Ribeaud D, Eisner M (2022). "Emotional distress in young adults during the COVID-19 pandemic: Evidence of risk and resilience from a longitudinal cohort study." *Psychological Medicine*. 52(5): 824-833. doi:10.1017/S003329172000241X.
9. <sup>a</sup>Zheng Y, Zheng S (2023). "Exploring educational impacts among pre, during and post COVID-19 lockdowns from students with different personality traits." *International Journal of Educational Technology in Higher Education*. 20(1). doi:10.1186/s41239-023-00388-4.
10. <sup>a</sup>Besser A, Flett GL, Nepon T, Zeigler-Hill V (2022). "Personality, cognition, and adaptability to the Covid-19 pandemic: Associations with loneliness, distress, and positive and negative mood states." *International Journal of Mental Health and Addiction*. 20: 971-995. doi:10.1007/s11469-020-00421-x.
11. <sup>a</sup>Helliwell JF, Layard R, Sachs JD, De Neve J-E, Aknin LB, Wang S, editors. *World happiness report 2022*. New York: Sustainable Development Solutions Network; 2022. <https://worldhappiness.report/>.
12. <sup>a</sup>Hossain S, O'Neill S, Strnadová I. What constitutes student well-being: A scoping review of students' perspectives. *Child Indicators Research*. 16(2):447-483. doi:10.1007/s12187-022-09990-w.
13. <sup>a</sup>OECD. *Education at a Glance 2017: OECD Indicators*. OECD Publishing, Paris; 2017. doi:10.1787/eag-2017-en.
14. <sup>a</sup>Badri MA, Alkhaili M, Aldaheri H, Yang G, Albahar M, Alrashdi A (2022). "Exploring the Reciprocal Relationships between Happiness and Life Satisfaction of Working Adults-Evidence from Abu Dhabi." *International Journal of Environmental Research and Public Health*. 19(6): 3575. doi:10.3390/ijerph19063575.
15. <sup>a</sup>Castelli L, Marcionetti J (2024). "Life satisfaction and school experience in adolescence: the impact of school supportiveness, peer belonging and the role of academic achievement." *Journal of Adolescence*. 108: 1-12. doi:10.1016/j.adolescence.2023.10.001.

- emic self-efficacy and victimization." *Cogent Education*. 11(1). doi:10.1080/2331186X.2024.2338016.
16. <sup>a, b, c</sup>Somers C, Gill-Scalcucci S, Flett GL, Nepon T (2022). "The utility of brief mattering sub scales for adolescents: Associations with learning motivations, achievement, executive function, hope, loneliness, and risk behavior." *Journal of Psychoeducational Assessment*. doi:10.1177/07342829211055342.
  17. <sup>a, b</sup>Zhou J, Huebner ES, Tian L (2021). "Co-developmental trajectories of psychological need satisfactions at school: Relations to mental health and academic functioning in Chinese elementary school students." *Learning and Instruction*. 74: 101465. doi:10.1016/j.learninstruc.2021.101465.
  18. <sup>a</sup>Bloch S, Phillips SA (2022). "Mapping and making gangland: A legacy of redlining and enjoining gang neighborhoods in Los Angeles." *Urban Studies*. doi:10.1177/00420980211010426.
  19. <sup>a, b, c, d, e, f, g, h, i, j</sup>Flett GL (2022). "An introduction, review, and conceptual analysis of mattering as an essential construct and an essential way of life." *Journal of Psychoeducational Assessment*. 40(1): 3–36. doi:10.1177/07342829211057640.
  20. <sup>a</sup>Sandner M, Patzina A, Anger S, Bernhard S, Dietrich H (2023). "The COVID-19 pandemic, well-being, and transitions to post-secondary education." *Review of Economics of the Household*. 21(2): 461–483. doi:10.1007/s1150-022-09623-9.
  21. <sup>a, b</sup>Henseke G, Green F, Schoon I. Living with COVID-19: Subjective well-being in the second phase of the pandemic. *Journal of Youth and Adolescence*. 51(9):1679–1692. doi:10.1007/s10964-022-01648-8.
  22. <sup>a</sup>Schmid L, Christmann P, Oehrlein A-S, Stein A, Thönnissen C (2024). "Life satisfaction during the second lockdown of the COVID-19 pandemic in Germany: The effects of local restrictions and respondents' perceptions about the pandemic." *Applied Research in Quality of Life*. 19(2): 445–467. doi:10.1007/s11482-023-10249-x.
  23. <sup>a, b, c, d</sup>Giangrasso B, Casale S, Fioravanti G, Flett GL, Nepon T (2022). "Mattering and anti-mattering in emotion regulation and life satisfaction: A mediational analysis of stress and distress during the COVID-19 pandemic." *Journal of Psychoeducational Assessment*. 40(1): 125–141. doi:10.1177/07342829211056725.
  24. <sup>a, b, c, d, e, f</sup>Liu W, Gamble JH, Cao CH, Liao XL, Chen IH, Flett GL. The general mattering scale, the anti-mattering scale, and the fear of not mattering inventory: Psychometric properties and links with distress and hope among Chinese University students. *Psychology Research and Behavior Management*. 16:4445–4459. doi:10.2147/PRBM.S430455.
  25. <sup>a</sup>Rogowska AM, Ochnik D, Kuśnierz C, Jakubiak M, Schütz A, Held MJ, Arzenšek A, Benatov J, Berger R, Korchagina EV, Pavlova I, Blažková I, Konečná Z, Aslan I, Çınar O, Cuero-Acosta YA (2021). "Satisfaction with life among university students from nine countries: Cross-national study during the first wave of COVID-19 pandemic." *BMC Public Health*. 21(1): 2262. doi:10.1186/s12889-021-12288-1.
  26. <sup>a</sup>Cho EYN (2019). "A multilevel analysis of life satisfaction among secondary school students: Do school-level factors matter?" *Children and Youth Services Review*. 102: 231–242. doi:10.1016/j.childyouth.2019.05.002.
  27. <sup>a</sup>Widnall E, Adams EA, Plackett R, Winstone L, Haworth CMA, Mars B, Kidger J (2022). "Adolescent experiences of the covid-19 pandemic and school closures and implications for mental health, peer relationships and learning: A qualitative study in South-West England." *International Journal of Environmental Research and Public Health*. 19(12): 7163. doi:10.3390/ijerph19127163.
  28. <sup>a, b</sup>Schlossberg NK (1989). "Marginality and mattering: Key issues in building community." *New Directions for Student Services*. 48: 5–15.
  29. <sup>a</sup>Vaillancourt T, Brittain H, Krygsman A, Farrell AH, Peller D, Landon S, Saint-George Z, Vitoroulis I (2022). "In-person versus online learning in relation to students' perceptions of mattering during COVID-19: A brief report." *Journal of Psychoeducational Assessment*. doi:10.1177/07342829211053668.
  30. <sup>a, b, c, d, e</sup>Flett GL, Heisel MJ (2021). "Aging and feeling valued versus expendable during the covid-19 pandemic and beyond: A review and commentary of why mattering is fundamental to the health and well-being of older adults." *International Journal of Mental Health and Addiction*. 19(6): 2443–2469. doi:10.1007/s11469-020-00339-4.
  31. <sup>a</sup>Prihadi KD, Lim ESZ, Sim E, Chong KY. Mattering and life satisfaction among the quarantined adults in Malaysia during the COVID-19 pandemic. *International Journal of Public Health Science*. 10(1):189–193. doi:10.1159/ijphsc.v10i1.20684.
  32. <sup>a, b, c, d</sup>Flett GL, Nepon T, Goldberg JO, Rose AL, Atkey SK, Zaki-Azat J (2022). "The Anti-Mattering Scale: Development, psychometric properties and associations with well-being and distress measures in adolescents and emerging adults." *Journal of Psychoeducational Assessment*. 40(1): 37–59. doi:10.1177/07342829211050544.
  33. <sup>a</sup>Scarpa MP, Di Martino S, Prilleltensky I (2021). "Mattering mediates between fairness and well-being." *Frontiers in Psychology*. 12: 744201. doi:10.3389/fpsyg.2021.744201.

34. <sup>△</sup>Rosenberg M, McCullough BC (1981). "Mattering: Inferred significance and mental health among adolescents." *Research in Community & Mental Health*. 2: 163–182.
35. <sup>△</sup><sup>♂</sup>Flett GL (2018). *The psychology of mattering: Understanding the human need to be significant*. Elsevier Academic Press.
36. <sup>△</sup>Brown JLD, Potter S (2024). "Integrating the philosophy and psychology of well-being: An opinionated overview." *Journal of Happiness Studies*. 25: article 50. doi:10.1007/s10902-024-00763-6.
37. <sup>△</sup>Ryan RM, Deci EL (2001). "On happiness and human potentials: a review of research on hedonic and eudaimonic well-being." *Annual Review of Psychology*. 52: 141–166. doi:10.1146/annurev.psych.52.1.141.
38. <sup>△</sup>Diener E, Oishi S, Tay L (2018). "Advances in subjective well-being research." *Nature Human Behaviour*. 2(4): 253–260. doi:10.1038/s41562-018-0307-6.
39. <sup>△</sup>Jovanović V, Joshanloo M. The contribution of positive and negative affect to life satisfaction across age. *Applied Research in Quality of Life*. 17(2):511–524. doi:10.1007/s11482-020-09903-5.
40. <sup>△</sup>Thorsteinsen K, Vittersø J (2018). "Striving for well-being: The different roles of hedonia and eudaimonia in goal pursuit and goal achievement." *International Journal of Wellbeing*. 8(2): 89–109. doi:10.5502/ijw.v8i2.733.
41. <sup>△</sup>Padmanabhanunni A, Pretorius TB, Isaacs SA. Satisfied with Life? The Protective Function of Life Satisfaction in the Relationship between Perceived Stress and Negative Mental Health Outcomes. *International Journal of Environmental Research and Public Health*. 20(18):6777. doi:10.3390/ijerph20186777.
42. <sup>△</sup>Diener E, Emmons RA, Larsen RJ, Griffin S (1985). "The Satisfaction With Life Scale." *Journal of Personality Assessment*. 49(1): 71–75. doi:10.1207/s15327752jpa4901\_13.
43. <sup>△</sup><sup>♂</sup><sup>♀</sup>Krys K, Park J, Kocimska-Zych A, Kosiarczyk A, Selim HA, Wojtczuk-Turek A, et al. Personal life satisfaction as a measure of societal happiness is an individualistic presumption: Evidence from fifty countries. *Journal of Happiness Studies*. 22(5):2197–2214. doi:10.1007/s10902-020-00311-y.
44. <sup>△</sup>Ng YK. Happiness or life satisfaction?. In: *Happiness—concept, measurement and promotion*. Springer, Singapore; 2022. doi:10.1007/978-981-33-4972-8\_4.
45. <sup>△</sup><sup>♂</sup>Helliwell JF, Layard R, Sachs JD, De Neve J-E, Aknin LB, Wang S, editors. *World happiness report 2024*. University of Oxford: Wellbeing Research Centre; 2024.
46. <sup>△</sup>Liu W, Mei J, Tian L, Huebner ES. Age and gender differences in the relation between school-related social support and subjective well-being in school among students. *Social Indicators Research*. 125(3):1065–1083. doi:10.1007/s11205-015-0873-1.
47. <sup>△</sup><sup>♂</sup><sup>♀</sup>Al-Attayah A, Nasser R (2016). "Gender and age differences in life satisfaction within a sex-segregated society: sampling youth in Qatar." *International Journal of Adolescence and Youth*. 21(1): 84–95. doi:10.1080/02673843.2013.808158.
48. <sup>△</sup>Bonhag R, Froese P (2022). "Sources of mattering for women and men: Gender differences and similarities in feelings of social significance." *Sociological Perspectives*. 65(4): 748–767. doi:10.1177/07312124211057119.
49. <sup>△</sup><sup>♂</sup><sup>♀</sup>Cheat FYW, Li LP (2020). "Am I Matter for Others?" A study on mattering among students in a public university. *Jurnal Psikologi Malaysia*. 34(3): 176–185. <https://spaj.ukm.my/ppppm/jpm/article/view/514>
50. <sup>△</sup><sup>♂</sup><sup>♀</sup>Rayle AD. Adolescent gender differences in mattering and wellness. *Journal of Adolescence*. 28(6):753–763. doi:10.1016/j.adolescence.2004.10.009.
51. <sup>△</sup><sup>♂</sup><sup>♀</sup><sup>♂</sup>Dadfar M, Lester D, Sanadgol S (2021). "The interpersonal mattering scale: Its reliability and validity in an Iranian sample." *Mental Health, Religion & Culture*. 24(3): 244–260. doi:10.1080/13674676.2020.1726884.
52. <sup>△</sup><sup>♂</sup><sup>♀</sup><sup>♂</sup>Shafiq B, Ali A, Iqbal H (2024). "Perfectionism, mattering and loneliness in young adulthood of Generation-Z." *Heliyon*. 10(1): e23330. doi:10.1016/j.heliyon.2023.e23330.
53. <sup>△</sup>Kawarazuka N, Locke C, Seeley J. Women bargaining with patriarchy in coastal Kenya: contradictions, creative agency and food provisioning. *Gender, Place & Culture*. 26(3):384–404. doi:10.1080/0966369X.2018.1552559.
54. <sup>△</sup>Sibanda M (2021). "Understanding gender inequality in Kenya: The role of patriarchy and cultural norms." *Journal of African Studies*. 59(4): 502–517.
55. <sup>△</sup><sup>♂</sup>Brisson R, Mendes FG, Catunda C (2023). "Accounting for the gender gap in adolescents' life satisfaction: evidence from nationally representative samples of school attendees in Luxembourg." *International Journal of Adolescence and Youth*. 28(1): 2283563. doi:10.1080/02673843.2023.2283563.
56. <sup>△</sup><sup>♂</sup><sup>♀</sup>Chen X, Cai Z, He J, Fan X (2020). "Gender differences in life satisfaction among children and adolescents: A meta-analysis." *Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being*. 21(6): 2279–2307. doi:10.1007/s10902-019-00169-9.
57. <sup>△</sup>Homocianu D. Life satisfaction: Insights from the World Values Survey. *Societies*. 14(7):119. doi:10.3390/soc14070119.
58. <sup>△</sup><sup>♂</sup><sup>♀</sup><sup>♂</sup><sup>♀</sup>Joshanloo M, Jovanović V. The relationship between gender and life satisfaction: analysis across de-

- mographic groups and global regions. *Archives of Women's Mental Health*. 23(3):331–338. doi:10.1007/s00737-019-00998-w.
59. <sup>a</sup> <sup>b</sup> <sup>c</sup> Namazi A. Gender differences in general health and happiness: A study on Iranian engineering students. *PeerJ*. 10:e14339. doi:10.7717/peerj.14339.
  60. <sup>a</sup> Salehi N, Joshanloo M, Lamont S, Whitehead D (2024). "Predictors of life satisfaction: A nationwide investigation in Iran." *Health & Social Care in the Community*. 2024: article 8843363. doi:10.1155/2024/8843363.
  61. <sup>a</sup> <sup>b</sup> <sup>c</sup> Daw TM, Reid NJ, Coulthard S, Chaigneau T, Antón VM, Cheupe C, Wells G, Bueno E (2023). "Life satisfaction in coastal Kenya and Mozambique reflects culture, gendered relationships and security of basic needs: Implications for ecosystem services." *Ecosystem Services*. 62: 101532. doi:10.1016/j.ecoser.2023.101532.
  62. <sup>a</sup> Amoako K, Asamoah G (2020). Indicators of students' satisfaction of quality education services in some selected universities in Ghana. *South African Journal of Higher Education* <https://www.researchgate.net/publication/346537998>
  63. <sup>a</sup> <sup>b</sup> Lenz AS, Watson JC, Luo Y, Norris C, Nkyi A. Cross-cultural validation of four positive psychology assessments for use with a Ghanaian population. *International Journal for the Advancement of Counselling*. 40(Supplement 1):148–161. doi:10.1007/s10447-017-9317-8.
  64. <sup>a</sup> <sup>b</sup> Nyaranga RL, Ngesu L, K'Odhiambo AK, Masese A. Prevalence of various forms of domestic violence and their effects on students' classroom behaviors in Bungoma County, Kenya. *Journal of Educational Research in Developing Areas*. 2(3):278–289. doi:10.47434/JEREDA.2.3.2021.278.
  65. <sup>a</sup> Bogaerts A, Claes L, Buelens T, Verschueren M, Palmeroni N, Bastiaens T, Luyckx K (2021). "Identity synthesis and confusion in early to late adolescents: Age trend, gender differences, and associations with depressive symptoms." *Journal of Adolescence*. 87: 106–116. doi:10.1016/j.adolescence.2021.01.006.
  66. <sup>a</sup> <sup>b</sup> Huebner ES. Initial development of the students' life satisfaction scale. *School Psychology International*. 12:231–240.
  67. <sup>a</sup> <sup>b</sup> Jovanović V, Rudnev M, Arslan G, Buzea C, Dimitrova R, Góngora V, et al. The satisfaction with life scale in adolescent samples: Measurement invariance across 24 countries and regions, age, and gender. *Applied Research in Quality of Life*. 17(4):2139–2161. doi:10.1007/s11482-021-10024-w.
  68. <sup>a</sup> Hair J, Hollingsworth CL, Randolph AB, Chong AYL (2017). "An updated and expanded assessment of PLS-SEM in information systems research." *Industrial Management & Data Systems*. 117(3): 442–458. doi:10.1108/IIMDS-04-2016-0130.
  69. <sup>a</sup> Choi Y, Hong HY (2020). "The mediating effects of mattering and self-acceptance in the relationship between socially prescribed perfectionism and social anxiety." *The Journal of the Korea Contents Association*. 20(1): 259–270. doi:10.5392/JKCA.2020.20.01.259.
  70. <sup>a</sup> Cole D, Newman CB, Hypolite LI (2020). "Sense of belonging and mattering among two cohorts of first-year students participating in a comprehensive college transition program." *American Behavioral Scientist*. 64(3): 276–297. doi:10.1177/0003764219869417.
  71. <sup>a</sup> Hamby S, Taylor E, Mitchell K, Jones L, Newlin C (2020). "Health-related quality of life among adolescents as a function of victimization, other adversities, and strengths." *Journal of Pediatric Nursing*. 50: 46–53. doi:10.1016/j.pedn.2019.11.001.
  72. <sup>a</sup> <sup>b</sup> Shapiro JR, Klein SL, Morgan R (2021). "Stop 'controlling' for sex and gender in global health research." *BMJ Global Health*. 6: 005714. doi:10.1136/bmjgh-2021-005714.
  73. <sup>a</sup> Batz-Barbarich C, Tay L, Kuykendall L, Cheung HK (2018). "A Meta-analysis of gender differences in subjective well-being: Estimating effect sizes and associations with gender inequality." *Psychological Science*. 29(9): 1491–1503. doi:10.1177/0956797618774796.
  74. <sup>a</sup> Maggi G, Baldassarre I, Barbaro A, Cavallo ND, Cropanzano M, Nappo R, Santangelo G. Age- and gender-related differences in the evolution of psychological and cognitive status after the lockdown for the COVID-19 outbreak: a follow-up study. *Neurological Sciences*. 43(3):1521–1532. doi:10.1007/s10072-021-05768-0.
  75. <sup>a</sup> Ngesu LM. Voices from the students: Dissatisfaction and violence in secondary schools in Kenya. *Journal of Educational Research in Developing Areas*. 3(1):73–79. doi:10.47434/JEREDA.3.1.2022.73.
  76. <sup>a</sup> Paradisi M, Matera C, Nerini A. Feeling important, feeling well. The association between mattering and well-being: A meta-analysis study. *Journal of Happiness Studies*. 25(4). doi:10.1007/s10902-024-00720-3.
  77. <sup>a</sup> Choukas-Bradley S, Roberts SR, Maheux AJ, Nesi J (2022). "The perfect storm: A developmental-sociocultural framework for the role of social media in adolescent girls' body image concerns and mental health." *Clinical Child and Family Psychology Review*. 25(4): 681–701. doi:10.1007/s10567-022-00404-5.
  78. <sup>a</sup> Ireri AM. Academic identity status and achievement goal orientation as predictors of academic achievement among form three students in Embu County, Kenya. *PHD Thesis, Kenyatta University, Kenya; 2015*. <https://kerd.ku.ac.ke/handle/123456789/1358>.

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