**Vol 2 Issue 2 (Jan-March 2025)**

**ISSN (Online): 3006-4740**

**ISSN (Print): 3006-4732**

**EFFECT OF GRIT AND PARENTAL EXPECTATIONS ON CRITICAL THINKING AMONG UNIVERSITY STUDENTS: EMOTIONAL INTELLIGENCE AS A MODERATOR**

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**Abstract**

The study examined the effect of grit and parental expectations on critical thinking among university students with emotional intelligence as a moderator. Sample comprises of 230 university students (female=115, male=115) taken from different universities of Islamabad. Short Grit Scale (Duckworth et al., 2007), Living-up-to-Parental Expectation Inventory (Wang & Heppner, 2002), Brief Emotional Intelligence Scale (Davies et al., 2010) and Critical Thinking Disposition Scale (Edward, 2013) were used to measure grit, parental expectations, emotional intelligence and critical thinking. Results revealed significant positive correlation between grit, parental expectations, emotional intelligence and critical thinking. Grit and parental expectations were significant predictors of critical thinking. Emotional Intelligence was a non-significant moderator between study variables. Non-significant differences between genders and university students were found in the study variables. The findings underscore the importance of fostering grit and parental expectations in enhancing critical thinking of university students.

***Keywords:***Critical thinking, Grit, Parental expectations, Emotional intelligence, University students.

1. **Introduction**

Grit, defined as perseverance and passion for long-term goals, plays a pivotal role in critical thinking development. Individuals with high grit scores are more likely to work diligently, remain focused, and exhibit resilience in the face of challenges, enabling them to engage in the complex cognitive processes fundamental to critical thinking (Duckworth et al., 2007). Alongside grit, parental expectations significantly shape a child’s motivation, self-concept, and learning orientation. Parents who set high but achievable goals for their children instil a sense of purpose, fostering the sustained effort necessary for long-term academic and cognitive growth (Cheung & Pomerantz, 2015).

The interplay between grit and parental expectations highlights the combined influence of internal drive and external support in creating an optimal environment for cognitive development. Critical thinking, a vital cognitive skill, involves conceptualizing, analysing, and evaluating information to make reasoned decisions and solve problems (Mason, 2007). Additionally, emotional intelligence, the ability to perceive, regulate, and use emotions to promote thought and intellectual growth (Salovey & Mayer, 1990), may further enhance critical thinking by fostering emotional control, adaptability, and reflective learning.

Grit, characterized by perseverance and passion for long-term goals, plays a vital role in critical thinking development. Students with higher grit exhibit greater persistence and focus, enabling them to tackle complex academic challenges and develop superior critical thinking skills over time (Clark et al., 2019; Huang et al., 2015). However, grit alone is insufficient; a supportive environment, particularly balanced parenting, is essential to channel persistence into meaningful cognitive outcomes rather than repetitive effort (Duckworth et al., 2007). Seo and Lee (2023) further emphasized grit’s role in fostering creativity and problem-solving, highlighting its ability to enhance focus and persistence, which are crucial for critical thinking and innovative idea generation.

Parental expectations significantly influence students' critical thinking by shaping their cognitive and emotional development. Supportive and realistic expectations encourage intellectual risk-taking and problem-solving, creating an environment conducive to critical thinking (Kaur, 2017). Conversely, overly high expectations can induce stress and anxiety, hindering cognitive adaptability and reflective thinking, as observed in Chinese medical students under strict parental pressure (Huang et al., 2015). The inverted-U model of parental expectations posits that moderate levels are most beneficial for cognitive growth, while excessive expectations can inhibit critical thinking (Jianqiong& Yuqing, 2022).

Parental involvement and realistic expectations are key to fostering grit in children. Studies reveal that supportive parenting, characterized by emotional warmth and high but achievable standards, promotes resilience and persistence in students (Black, 2014; Dunn, 2018). Authoritative parenting paired with a growth mindset encourages students to embrace challenges, view failures as learning opportunities, and develop grit and long-term dedication to goals (Waithaka et al., 2017). Furthermore, parents’ own grit and commitment to their child’s education significantly influence their child’s grit, demonstrating the intergenerational transmission of perseverance and academic motivation (Won & Lee, 2023).

This study investigates the relationship between grit, parental expectations, and critical thinking among university students, while examining how emotional intelligence may moderate these variables. Critical thinking is fundamental to both academic and non-academic success, making it essential to identify factors that influence its development. Existing literature highlights positive associations between grit, parental expectations, and cognitive growth (Alhadabi& Karpinski, 2020; Jianqiong& Yuqing, 2022). However, limited research directly examines their impact on critical thinking. Additionally, while emotional intelligence has been shown to enhance critical thinking by improving emotion regulation and focus (Christodoulakis et al., 2023), its role in moderating these relationships remains unclear in academic settings.

Most prior research has focused on adolescents in schools or colleges(Guo, 2018), leaving gaps in understanding how these factors interact within the unique academic challenges of university settings. Furthermore, little attention has been given to comparing these relationships across different academic stages, such as undergraduate and graduate levels. There are numerous Pakistani studies on grit (Arif et al., 2021), parental expectations (Khanam et al., 2022; Imtiaz & Iqbal, 2023), emotional intelligence (Latif & Rao, 2024; Kashif et al., 2024) and critical thinking (Naveed et al., 2023; Tariq et al., 2024) conducted. However, there is need for a study to assess the relationship between these variables.

Findings on these can give insight into the kind of resilience and complex thinking that students need to practice in order successfully tackle academic and real-world problems.

* 1. **Objectives**
* To examine the relationship between grit, parental expectations, critical thinking and emotional intelligence among university students.
* To assess the impact of grit and parental expectations on critical thinking among university students.
* To investigate the role of emotional intelligence as moderator in the relationship between grit, parental expectations and critical thinking among university students.
	1. **Hypotheses**
* There is a positive correlation between grit, parental expectations, critical thinking and emotional intelligence among university students.
* Parental expectations lead to critical thinking among university students.
* Grit leads to critical thinking among university students.
* Emotional intelligence work as moderator between grit and critical thinking among university students.
* Emotional intelligence work as moderator between parental expectations and critical thinking among university students.
* Male students score higher on grit, parental expectations, emotional intelligence, and critical thinking as compared to female university students.
1. **Methodology**
	1. **Research Design**

This study is based on quantitative research. It uses a correlational research design to examine the correlation between grit, parental expectations, critical thinking and emotional intelligence.

* 1. **Sample**

Sample comprised of 230 university students. It was collected through using convenience sampling technique, 115 of which were male and 115 female students from universities of Islamabad. Age range of sample was in between 18 to 25 years. And the education of participants was comprised of undergraduate and graduate level.

* 1. **Instruments**
		1. ***Short Grit Scale (SGS-8)***

The Short Grit Scale is a brief self-report questionnaire designed by Duckworth et al. (2007) that assesses an individual’s perseverance of effort as well their consistency of interest toward long term goals despite facing adversity. It is a 5-point Likert scale with total 8 items. The options ranging from strongly agree to strongly disagree. The Cronbach's alpha coefficients range from .73 to .84. Higher scores indicate high levels of grit, while lower scores indicate low levels of grit (Duckworth & Quinn, 2009).

* + 1. ***Living-up-to-Parental Expectation Inventory (LPEI)***

The LPEI was created by the Wang & Heppner (2002). The subscale of this scale was used in this research called Academic Achievements which measures the expectations parents hold regarding their child’s academic achievements. It includes 9 items and each item is rated on a 6-point Likert-type scale that ranges from strongly disagree to strongly agree. The Cronbach's alpha coefficients range from .71 to .83 (Wang & Heppner, 2002).

* + 1. ***Brief Emotional Intelligence Scale-10 (BEIS-10)***

Davies et al. (2010) developed the Brief Emotional Intelligence Scale (BEIS-10). It is a 10 items scale developed to assess the contemporary construct of emotional intelligence (EI). The scale evaluates important aspects of emotional intelligence, such as perceiving, using, interpreting emotions associated with empathy. It is a 5-point Likert scale, with options ranging from strongly disagree to strongly agree. The total score ranges from 5 to 40. It shows good internal consistency with Cronbach alpha value of .70 as well as construct validity.

* + 1. ***Critical Thinking Disposition Scale (CTDS)***

The Critical Thinking Disposition Scale (CTDS) is developed by Sosu (2013). It is a 5-point Likert scale which comprises of 11 items with options ranging from strongly disagree to strongly agree. It is designed to assess the critical thinking of individuals. Its subscales include critical openness and reflective scepticism. And it has an internal consistency of scores; Cronbach alpha of 0.75 and 0.70 for the subscales, critical openness and reflective scepticism, respectively.

* 1. **Procedure**

Ethical approval was attained from Ethical Review Board, Department of Psychology, IIUI, Ethics Committee, along with head of the institutes. Then we collected data from participants from International Islamic University Islamabad (IIUI) and National University of Computer Emerging Sciences (FAST) to collect data. The participants were informed about the purpose and nature of study as well as ensured regarding privacy and confidentially of the responses. After taking their written informed consent, the questionnaire was presented to the participants with a demographic sheet which included age, gender, education and institute. Responses were collected from students who were enrolled in university at the moment.

1. **Results**

**Table 1*Frequences and Percentages of Demographic Variables of Study (N=230)***

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | Category | *f* | % |
| Gender | Male | 115 | 50.0 |
|  | Female | 115 | 50.0 |
| Education | Undergraduate | 195 | 84.8 |
|  | Graduate | 35 | 15.2 |
| Institute | IIUI | 103 | 44.8 |
|  | FAST | 127 | 55.2 |

Table 1 shows the frequencies and percentages of demographic variables. Results reveal that an equal number of male students (*f*= 115, 50.0%) and female students (*f*= 115, 50.0%) participated in the study. The participants have different level of education and large number of participants are undergraduates (*f*= 195, 84.8%) as compared to graduates (*f*= 35, 15.2%). Participants are from different universities higher number of students are from National University of Computer Emerging Sciences (FAST) (*f*= 127, 44.8%) as compared to International Islamic University Islamabad (IIUI) (*f*= 127, 55.2%).

**Table 2*Descriptive Statistics and Psychometric Properties of the Short Grit Scale, Parental Expectations Scale, Critical Thinking Disposition Scale, and Brief Emotional Intelligence Scale (N=230)***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | Range |  |  |
| Variables | *k* | *α* | *M(S.D)* | Potential | Actual | Skewness | Kurtosis |
| Short Grit Scale | 8 | .60 | 24.63(4.90) | 8-40 | 12-37 | .02 | -.02 |
| Parental Expectations Scale | 9 | .86 | 35.76(10.01) | 9-54 | 9-35 | -.53 | -.04 |
| Critical Thinking Disposition Scale | 11 | .86 | 40.81(7.83) | 11-55 | 15-54 | -.96 | 1.00 |
| Brief Emotional Intelligence Scale | 10 | .78 | 36.69(6.51) | 10-50 | 16-48 | -.76 | .37 |

Table 2 indicates descriptive statistics and psychometric properties for the study variables. The Cronbach’s α for Short Grit Scale is .60 which indicates low internal consistency. The Cronbach’s α for the subscaleParental Expectations Scale is .86 which indicates satisfactory internal consistency. The Cronbach’s α for Critical Thinking Disposition Scale is also .86 which indicates satisfactory internal consistency. The Cronbach’s α for Brief Emotional Intelligence Scale is .78 which also indicates satisfactory internal consistency. The standardized Skewness and kurtosis values are between -1 to +1, which shows data is normally distributed.

**Table 3*Correlation of Grit, Parental Expectations, Critical Thinking and Emotional Intelligence Among University Students (N=230)***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Variables | 1 | 2 | 3 | 4 |
| 1 | Grit | - | - | - | - |
| 2 | Parental Expectations | .05 | - | - | - |
| 3 | Critical Thinking | .21\*\* | .20\*\* | - | - |
| 4 | Emotional Intelligence | .22\*\* | .15\* | .70\*\* | - |

*Note. \*p<0.05; \*\*p<0.01*

 Table 3 shows correlation matrix for all the study variables. Results reveal that Grit has non-significant correlation with parental expectations (*r*=.05 *p*>.05), while significant positive correlation with critical thinking (*r*=.21, *p*<.01) and emotional intelligence (*r*= .22, *p*<.01). Parental expectations have significant positive correlation with critical thinking (*r*=.20, *p*<.01) and emotional intelligence (*r*=.15, *p*<.05). Critical thinking has significant positive correlation with emotional Intelligence (*r*=.70, *p*<.01).

**Table 4*Simple Linear Regression Showing Grit as Predictor of Critical Thinking Among University Students (N=230)***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variables | *B* | *SE* | *β* | *t* | *p* |
| Constant | 32.72 | 2.59 |  | 12.59 | <.001 |
| Grit | .33 | .10 | .21 | 3.17 | .002 |

*Note. R=.21,* *R² =.04*

 Table 4 shows the impact of grit on critical thinking among university students. The *R²* value of .04 revealed that the predictor variable grit explained 4% of variance in the outcome variable critical thinking with (*F*=10.08, *p*<.001). The findings revealed that grit positively predicts critical thinking (*β*=.21, *p*<.005).

**Table 5*Simple Linear Regression Showing Parental Expectations as Predictor of Critical Thinking Among University Students (N=230)***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variables | *B* | *SE* | *β* | *t* | *p* |
| Constant | 35.24 | 1.88 |  | 18.69 | <.001 |
| Parental Expectations | .16 | .10 | .19 | 3.07 | .002 |

*Note. R=.20, R² =.04*

 Table 5 shows the impact of grit on critical thinking among university students. The *R²* value of .04 revealed that the predictor variable parental expectations explained 4% of variance in the outcome variable critical thinking (*F*=9.41, *p*<.001). The findings revealed that parental expectations positively predict critical thinking (*β*=.20, *p*<.005).

**Table 6*****Moderating Effect of Emotional Intelligence on Grit and Critical Thinking (N=230)***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variables | *B* | *SE* | *β* | *t* | *p* |
| Constant | 8.73 | 2.61 |  | 3.34 | <.001 |
| Grit | .05 | .08 | .03 | .73 | .46 |
| Emotional Intelligence | .83 | .05 | .69 | 14.32 | <.001 |
| Grit\*Emotional Intelligence | .42 | .44 | .04 | .93 | .35 |

Table6 shows the moderating effect of emotional intelligence on grit and critical thinking. Findings reveal that the emotional intelligence is a non-significant moderator between grit and critical thinking among university students.

**Table 7*Moderating Effect of Emotional Intelligence on Parental Expectations and Critical Thinking (N=230)***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variables | *B* | *SE* | *β* | *t* | *p* |
| Constant | 8.09 | 2.33 |  | 3.46 | <.001 |
| Parental Expectations | .07 | .03 | .09 | 1.99 | .047 |
| Emotional Intelligence | .82 | .05 | .68 | 14.43 | <.001 |
| Parental Expectations\*Emotional Intelligence | -.49 | .33 | -.07 | -1.48 | .138 |

Table shows the moderating effect of emotional intelligence on parental expectations and critical thinking. Findings reveal that the emotional intelligence is a non-significant moderator between parental expectations and critical thinking university students.

**Table 8*Mean, Standard Deviation (S.D) and t-values of Male and Female University Studentson Grit, Parental Expectations, Critical Thinking and Emotional Intelligence (N=230)***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Male*(N=115)* | Female*(N=115)* |  |  | *95% CI* |  |
| Variables | *M(S.D)* | *M(S.D)* | *t* | *p* | *LL* | *UL* | *Cohen’s d* |
| Grit | 24.80(5.46) | 24.47(4.29) | .49 | .62 | -.95 | 1.59 | .06 |
| Parental Expectations | 36.86(10.26) | 34.65(9.67) | 1.68 | .09 | -.37 | 4.80 | .22 |
| Critical Thinking | 41.24(8.16) | 40.38(7.50) | .83 | .41 | -1.17 | 2.89 | .11 |
| Emotional Intelligence | 37.21(6.48) | 36.16(6.51) | 1.21 | .22 | -.64 | 2.73 | .16 |

*Note. Cl = Confidence Interval; LL = Lower Limit; UL = Upper Limit.*

Above Table shows result of a comparison between male and female university students on Grit, Parental expectations, Critical Thinking and Emotional Intelligence. Results indicate non-significant difference between maleand femaleuniversity students on grit, parental expectations, critical thinking and emotional intelligence.

**Table 9*Mean, Standard Deviation (S.D) and t-values of Undergraduate and Graduate Students on Grit, Parental Expectations, Critical Thinking and Emotional Intelligence (N=230)***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Undergraduate*(N=195)* | Graduate*(N=35)* |  |  | *95% Cl* |  |
| Variables | *M(S.D)* | *M(S.D)* | *t* | *p* | *LL* | *UL* | *Cohen’s d* |
| Grit | 24.64(4.94) | 24.60(4.76) | .05 | .96 | -1.73 | 1.82 | .01 |
| Parental Expectations | 35.86(10.08) | 35.17(9.74) | .37 | .71 | -2.93 | 4.32 | .07 |
| Critical Thinking | 40.40(8.07) | 43.11(5.90) | -1.89 | .06 | -5.53 | .10 | -.35 |
| Emotional Intelligence | 36.45(6.59) | 37.97(5.90) | -1.27 | .20 | -3.86 | .83 | -.23 |

*Note. Cl = Confidence Interval; LL = Lower Limit; UL = Upper Limit.*

Above Table shows result of a comparison between undergraduate and graduatestudents on Grit, Parental expectations, Critical Thinking and Emotional Intelligence. Results indicate non-significant difference between undergraduate and graduate students on grit, parental expectations, critical thinking and emotional intelligence.

**Table 10*Mean, Standard Deviation (S.D) and t-values of Students of IIUI and FAST*** ***on Grit, Parental Expectations, Critical Thinking and Emotional Intelligence (N=230)***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | IIUI*(N=103)* | FAST*(N=127)* |  |  | *95% Cl* |  |
| Variables | *M(S.D)* | *M(S.D)* | *t* | *p* | *LL* | *UL* | *Cohen’s d* |
| Grit | 24.63(4.32) | 24.64(5.35) | -.02 | .98 | -1.29 | 1.27 | -.00 |
| Parental Expectations | 34.23(9.87) | 37.00(9.99) | -2.09 | .04 | -5.36 | -.17 | -.27 |
| Critical Thinking | 39.96(7.71) | 41.50(7.88) | -1.48 | .14 | -3.58 | .49 | -.19 |
| Emotional Intelligence | 35.92(6.72) | 37.30(6.28) | -1.61 | .11 | -3.07 | .31 | -.21 |

*Note. Cl = Confidence Interval; LL = Lower Limit; UL = Upper Limit.*

Above Table shows result of a comparison between IIUI and FAST university students on Grit, Parental expectations, Critical Thinking and Emotional Intelligence. Results indicate non-significant difference between International Islamic University Islamabad (IIUI) and National University of Computer Emerging Sciences (FAST)university students on grit, critical thinking and emotional intelligence. While university students from National University of Computer Emerging Sciences (FAST)(M=37.00, S.D=9.99)scored higher on parental expectations as compared to the students from International Islamic University Islamabad (IIUI) (M=34.23, S.D=9.87).

1. **Discussion**

This research investigated the impact of grit and parental expectations on the critical thinking of university students, with emotional intelligence acting as a moderating variable. Using a quantitative, correlational design, the study explored the interactions between these constructs. After taking the ethical approval and informed consent, data was collected from a total of 230 university students from International Islamic University Islamabad and National University of Computer Emerging Sciences (FAST).

The first hypothesis proposed that there would be a positive correlation between grit, parental expectations, critical thinking and emotional intelligence among university students. The findings partially support this hypothesis. Grit is positively correlated with critical thinking and emotional intelligence but shows no significant correlation with parental expectations. Parental expectations are positively correlated with critical thinking and emotional intelligence. A strong correlation exists between critical thinking and emotional intelligence. Credé et al. (2017) highlight grit as a determinant of academic success, suggesting its connection to critical thinking. Parental expectations, according to Yamamoto and Holloway (2010), play a significant role in shaping cognitive outcomes, aligning with the positive relationship observed with critical thinking. Emotional intelligence's role in cognitive skills is consistent with Christodoulakis et al. (2023), who emphasize its importance in enhancing critical thinking.

The second hypothesis proposed that parental expectations would have an impact on critical thinking among university students. The results indicate that parental expectations positively predict critical thinking. Cheung and Pomerantz (2015) noted that parental expectations foster cognitive development, which enhances cognitive skills like critical thinking. The findings align with existing literature emphasizing the role of parental involvement in shaping cognitive development.

The third hypothesis stated that grit would have an impact on critical thinking among university students. Findings show that grit significantly predicts critical thinking. Duckworth et al. (2007) describe grit as perseverance and passion, essential for achieving complex cognitive outcomes like critical thinking. This finding aligns with Seo and Lee (2023), who emphasize grit as a factor in promoting creative and analytical thinking.

One hypothesis of the study proposed that emotional intelligence would moderate the relationship between grit and critical thinking among university students. While, no significant moderating effect of emotional intelligence was found on the relationship between grit and critical thinking. Emotional intelligence may independently contribute to critical thinking rather than interact with grit. Christodoulakis et al. (2023) found emotional intelligence crucial for critical thinking but did not explore moderating effects. Future studies could examine sample-specific variations.

Another hypothesis stated that emotional intelligence would also moderate the relationship between parental expectations and critical thinking among university students. But no significant moderating effect of emotional intelligence was found on this relationship. Emotional intelligence may also have direct rather than interactive effects on critical thinking. Literature such as Yamamoto and Holloway (2010) suggest parental expectations' effects on cognitive outcomes are less contingent on emotional intelligence. Contextual factors may influence these dynamics.

Lastly, it was proposed that male students would score higher on grit, parental expectations, emotional intelligence, and critical thinking as compared to female university students. But the results showed that non-significant differences were found between male and female university students across all variables. Cultural and educational similarities in the sample may have minimized gender differences. The non-significant difference in parental expectations could be due to economic realities that might have led parents to see daughters as equally capable of contributing to family success through education and professional achievement. Existing research, including Clark et al. (2019), highlights minor variations in grit and cognitive outcomes by gender, suggesting context-specific influences.

**Limitations and Suggestions**

1. The study focuses on university students, limiting generalizability; future research should include diverse age groups and educational levels.
2. The self-reported data obtained in this study may introduce response bias; using objective or third-party assessments is recommended.
3. The correlational research design employed in this study identifies relationships among variables but does not allow for causal inferences. Future research could adopt an experimental or longitudinal design to uncover causal links between grit, parental expectations, critical thinking, and emotional intelligence.
4. Findings are influenced by the sociocultural context of the sample; replicating the study in varied cultural settings is necessary for broader applicability.
5. Exclusion of qualitative perspectives limits depth; combining qualitative methods with surveys can offer richer insights.

**Implications**

The findings of this study underline the critical importance of grit and parental expectations in fostering students' critical thinking abilities. These insights highlight the value of perseverance and consistent parental support in enhancing cognitive skills crucial for academic and personal success. Educational institutions and families can leverage these findings to implement targeted interventions, such as promoting grit and setting constructive parental expectations. This can contribute to the development of students' critical thinking capabilities, ultimately preparing them for complex decision-making in both academic and professional settings.

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