

The Impact of IQ and EQ on Students' Psychological Well-being: An Empirical Study on University Students

Gulle Zahra* Nawaz Ahmad** Amira Kaddour***

Abstract

The study attempts to gauge empirically the impact of Intelligence Quotient (IQ) and Emotional Quotient (EQ) on the student's psychological well-being. The population comprises university students. Data is collected through convenience sampling via a five-point Likert scale questionnaire. The total number of respondents in the survey were 200, which consisted of 109 males and 91 females. IQ and EQ are the independent variables, whereas psychological well-being is the dependent variable, with the moderating variables of Age and Gender. The study's findings reveal that IQ and EQ positively impact psychological well-being and are significant at a 99 per cent confidence interval ($p < 0.01$). Gender does not moderate the relationship of IQ and EQ with well-being. On the other hand, the age group does moderate the relationship between EQ and psychological well-being

Keywords: IQ; EQ; psychological well-being.

JEL Classification: C12, E71, I23, I31

1. Introduction

1.1 Background of the study

Emotional Quotient (EQ) became a subject of analysis in academic articles and thus reached its height in the early 1990s. According to Goleman (2003), this is EQ, not Intelligence Quotient (IQ), that predicts specific task-oriented skills and prospective leadership qualities. Goleman cited Lyle Spencer, Jr., president of Spencer Research and co-founder of Capacity

*Masters Student, Department of Business Administration, Shaheed Benazir Bhutto University, Shaheed Benazirabad, Pakistan. Email: gullezahra40@gmail.com

**Research Fellow, GOVCOPP, University of Aveiro, Portugal and Associate Professor, Department of Business Administration, Shaheed Benazir Bhutto University, Shaheed Benazirabad, Pakistan. Email: nawazahmad1976@gmail.com

*** Associate Professor, Department of Business Administration, King Khalid University KSA. Email: agaddour@kku.edu.sa

International, who also works in EQ and technology. Only a small percentage of the five hundred or so jobs on which studies were conducted show that what one learns in school makes someone a better worker in future. One must enter the field, but having it does not mean it would automatically make one a star. Rather, possessing crucial traits of IQ leads to more venerable performance (Mashar & Astuti, 2022; Rainie & Anderson, 2017).

According to many studies, EQ is a more reliable indicator of work performance. Langston (2001) contributed to research that identified the accomplishments and shortcomings of eleven (Robbins et al., 2009), American presidents. The six attributes evaluated were organization, communication, vision, political skill, cognitive style, and EQ. These skills help people perform better even in their academics prior to joining specific professions. Although some studies have identified a positive correlation between EQ and academic achievement, the findings are variant. Additionally, it has been proposed that developing EQ can have a maturing effect (Goleman, 2003).

EQ is criticized for being a term that is too ambiguous, unable to be consistent, and whose validity has been questioned throughout recent years. The following are some of the early researchers' definitions of EQ: Goleman (2003) describes EQ as the ability to understand our own and other people's feelings, to inspire ourselves, and to effectively manage our own and other people's emotions. EQ refers to skills different from yet complementary to IQ-measured or academic intelligence. Bar-On (2004) states that EQ refers to connected emotional and social skills. These competencies determine how effectively we know and communicate with ourselves, understand and relate to others, and handle the demands and responsibilities of daily life. Recently, some research has also revealed that a person's aptitude for succeeding in architecture may rely on concepts from EQ, such as imagination, emotional intelligibility, and other forms of tacit knowledge (Hutabarat et al., 2023). As a result, it has been proposed that the traditional aptitude measures, such as more significant academic standing and IQ, are inadequate.

The psychological concepts of intelligence and happiness are two of the most well-known indicators. Academic articles examine how EQ is employed, which gained climax in the early 1990s. Works in EQ and technology have only a small number of better associations which recognize one's academic achievements (Segal et al., 2021, 2023). Numerous researches support the idea that EQ is a better indicator of work performance. (Langston, 2001) identified the accomplishments and shortcomings of eleven American presidents in research. EQ's detractors claim that it is an idea that is too unclear to be consistent, and its validity is questioned (Robbins et al., 2009). Over the past few years, EQ has become a prominent study area. Modern researchers have described EQ in the following ways. The ability to identify one's own and other people's emotions, support oneself, and effectively manage emotions in one's relationships was described as EQ (Goleman, 2003). Bar-On (2004) stands for skills different from academic intelligence or the precisely cognizable

qualities consistent with IQ, but they complement it. EQ is a cross-section of interrelated emotional and social competencies.

These competencies determine how well we understand and express ourselves, comprehend and relate to others, and manage daily demands and pressures. The capacity of people to succeed in architecture may also depend on EQ ideologies like creativity, emotional awareness, and other mien of tacit knowledge, according to some recent research (Hutabarat et al., 2023). As a result, it has been proposed that the traditional aptitude measures, such as more significant academic standing and IQ, are inadequate. Intelligence and happiness are two of the best-known constructs in psychology. Early studies examined the relationship between these two components, but the relationship stays uncertain for all purposes. Thus, few large-scale quantitative analyses have been conducted. Most studies have examined the relationship between intelligence and mental and functional disorders. (Jauk et al., 2013; Nakano et al., 2021; Seligman & Csikszentmihalyi, 2000; Su et al., 2022)

1.2 Objectives of the Study

The study's objectives are to investigate the relationship between EQ, IQ and students' well-being psychology and determine whether age groups and gender moderate the relationship of EQ and IQ with students' well-being.

1.3 Scope of the Study

The study aims to investigate the relationship between emotional and intellectual quotients and psychological well-being. It involves investigating the correlation between IQ, EQ and other measures of psychological well-being, including stress, academic achievements, self-esteem and interpersonal connections. A couple of moderating factors Age and Gender are also investigated in this study. The study attempts to shed light on the respective contribution of IQ and EQ on students' mental health and general well-being through empirical research.

1.4 Research Questions

1. What is the relationship between EQ and students' well-being psychology?
2. What is the relationship between IQ and students' well-being psychology?
3. How do EQ and IQ affect students' well-being psychology?
4. How does gender moderate EQ?
5. How does gender moderate IQ?
6. How does the age factor moderate EQ?
7. How does the age factor moderate IQ?

1.5 *Statement of the Problem*

One can track one's emotions, identify them apart from others, and use them to direct one's thoughts, feelings, and behaviors if one possesses EQ. Interpersonal relationships need EQ; thus, teachers anticipate emotionally intelligent pupils who can rapidly advance through the skills and master most of them. To succeed academically, one must have the ability to produce favorable results, such as self-awareness, teamwork, and social skills. Everyone faces numerous obstacles and challenges in this life. Students who struggle to earn a degree face a variety of difficulties. They must perform well academically, adhere to deadlines and regulations, complete tasks on time, and maintain positive relationships with their peers in a way that is acceptable to society. In contrast, keeping in mind that there is a lack of research examining the influence of EQ and IQ on students' psychological well-being in our cultural setting. These gaps must be filled over time through empirical research. Therefore, the modern study was created to investigate the relationship between EQ and IQ and students' well-being psychology. It also examines the connection between student demographic variations, such as gender, age, family income level, discipline, EQ and IQ levels.

2. **Literature Review**

2.1 *Emotional Quotient*

Emotions are crucial in controlling and managing our conduct; they are often so dominant that we have no choice but to act by their wishes. Emotions can be defined as the enthusiastic frame of our brain. Instead of being able to live normally, people become disabled if they lack emotional current. "Emotion" originates in the Latin word "mover," meaning evoke. Many psychologists have agreed to support the meaning of "emotion" in their ways, drawing inspiration from this derivation (Elfenbein, 2022a, 2022b, 2023; Eliot & Hirumi, 2019; Hascher, 2010; Izard, 2009; Slovak et al., 2023).

Morris (1979) claimed that intelligence is a general capacity and that emotion is a distinct, perceptive, and subjective experience that entails ongoing physiological changes of a person to adapt his thoughts to changing demands intentionally. The term means intelligence, which is the ability to act with devotion, analyses critically, and effectively manage one's emotional intelligence, as defined by (Wechsler, 1944). The capacity of an agent to accomplish goals in a range of situations is measured by intelligence (Legg & Hutter, 2007).

There are many ways to define emotional intelligence, but the question now on everyone's mind is: What is EQ? Describe emotions. What precisely is intelligence? In order to respond to this query, we can define EQ as the capacity to distinguish between various feelings and recognize emotions. The term "emotional intelligence" connects intelligence, feelings and emotions. It refers to the intelligent interaction of thoughts and controlled

emotions. It stands for the capacity to express emotions and develop thoughts. It increases our ability to precisely detect and provoke feelings, allowing us to regulate those emotions to promote intellectual and emotional development. The term “emotional intelligence” relates to joy, anxiety, and a desire to run away from others. (Segal et al., 2021, 2023).

Additionally, Beldoch (2017) coined the term “emotional intelligence,” which is the capability to understand, control, and convey one’s and other people’s feelings. Although Beldoch coined the phrase in 1964, it only became widely used in 1995 by Golman. According to Golman’s theory, Self-awareness, self-management, social awareness, and relationship management are the four components. Goleman (2003) described EQ as a range of abilities and traits that support effective leadership. Differentiating between emotions and feelings, modifying the environment, and achieving one’s objectives are all examples of having EQ. Its final piece was lost when average people outperformed those with the highest IQs. Years of study suggest that EQ is a demanding trait that is somewhat imaginary. Four essential competencies that fall under social and personal competencies make up EQ. Personal competency assures one’s capacity for self-awareness and self-management, whereas relationship management and social awareness abilities make up social competency. Self-management is the ability to use emotions to guide action. Self-awareness focuses on noteworthy emotions.

Mayer et al. (1990) concluded that EQ is a part of social intelligence. It requires the ability to monitor both one’s own and other people’s emotions. They list the four components of emotional intelligence: managing emotions, emotional perception, employing emotions, and understanding emotions. These components are organized from the most fundamental to the most advanced psychological processes; the lowest level, 25, is designed and managed with the most fundamental capacities to experience, understand, and express emotions, while the highest-level component is concerned with the contemplation of emotional regulation. Emotions spend much time in all facets of interpersonal interaction (Segal et al., 2023; Sotvedt, 2014).

The concept of “social intelligence,” which (Mayer et al., 1990) used to describe a person’s capacity to direct and use in adaptive social interactions, served as a foundation for the theory of EQ. Thorndike distinguished three types of intelligence: social, mechanical, and abstract.

2.2 Intelligence Quotient

Human intelligence includes reasoning, planning, problem-solving, abstract thought, understanding complex concepts, fast learning, and experience. It involves more than only reading books, developing specialized academic skills, or passing tests. Instead, it demonstrates a more profound and broader capacity to interpret our environment: to see,

comprehend, or comprehend what is required and what needs to be done (Colom et al., 2010). Intelligence differs from person to person, just like other human characteristics. Individual intelligence varies as a result of variances in upbringing and environment. It suggests that IQ disparities between people are more influenced by inheritance than by environment. However, individuals from the same family members typically have very different intellectual levels (by an average of about 12 IQ points). Among the social factors influencing intelligence, the child's school appears to have a significant impact. Unexpectedly, the caliber of kindergarten and first-grade education also matters a lot. Because of the more experienced teachers in higher grades, academic improvements diminish while non-cognitive gains continue. In addition to these social influences, physical activity also plays a part in intelligence. When it comes to children, it helps build and consolidate memory; for the elderly, it helps maintain executive functions like planning and scheduling mental processes (Li et al., 2021).

2.3 *Psychological well-being*

According to Strickland et al. (2019), in psychological well-being, a 12-week follow-up study examined the mediating role of perceived stress in female students as health professionals about emotional intelligence, life fulfilment, and subjective enjoyment. They discovered that those with higher EQ reported less stress and more enjoyment and fulfilment from life. Their findings imply that perceived stress mediates the association between emotional quotient and well-being markers, particularly life satisfaction and happiness. High levels of EQ encourage or assist a person in creating a good sense of who they are, which helps them to achieve high levels of self-esteem. People with high levels of self-esteem are more outgoing, self-assured, and capable of managing difficulties, which results in successful performance and a happy existence. Cazan and Năstasă (2015) demonstrate how intense success in academic settings or improved adjustment correlates with EQ. Furthermore, high EQ is linked to lower stress, anxiety, and burnout and higher life satisfaction.

2.4 *Emotional Quotient and Psychological Well-being*

Emotional Quotient is an emotional intelligence that is highly associated with psychological well-being. The people who have more emotions live happier. Many researches reveal that emotional intelligence and psychological well-being are correlated with happiness. The higher the positive emotions, the lower the negative emotions, and the more satisfaction. According to previous studies, emotional intelligence, greater intelligence, and psychological well-being impact students in the face of mental or physical health. There is clear evidence that emotional intelligence capacities predict characteristics connected to psychological well-being, including a positive relationship between life satisfaction and happiness. (Guerra-Bustamante et al., 2019)

H1: EQ has a positive impact on students' psychological well-being.

2.5 *Intellectual quotient and psychological well-being*

The intellectual quotient is human intelligence, and it differs from person to person. (Gottfredson, 2008) posited that (subjective well-being) has no relationship of happiness with intelligence. However, the students IQ have a positive impact on psychological well-being. (Wigtal & Henriques, 2015) finds that IQ has a positive relationship with psychological well-being as well as with their dimensions, psychological well-being is a broad dimension, i.e., environmental mastery, personal growth dimension, and purpose in life of psychological well-being.

H2: IQ has a positive impact on students' psychological well-being.

2.6 *Theories of Emotion*

There are many ideas about emotions. However, a few that are relevant to this research are listed below in more detail:

2.6.1 *James Lange Theory*

Lange (1984) claimed that physiological reactions give rise to emotions. We may experience emotions due to physical and physiological changes brought on by the perception of a stimulus. A common misconception about emotions is that they are judgments about situations that cause feelings and bodily changes. These bodily alterations come before emotions, similar to feelings in that they represent our subjective experience. People feel emotions as they see their bodies' physiological reactions to outside stimuli. This hypothesis claims that people do not cry because they are depressed. Instead, when individuals are unhappy, they cry; when joyful, they smile. According to this hypothesis, many physiological states correspond to the various experiences of emotions.

2.6.2 *Cannon-Bard Theory*

According to the theory, the thalamus and hypothalamus, two lower brain regions, trigger emotional responses. Cannon asserts that an external input may activate receptors, causing excitation to initiate cortical impulses. Upon entry, the impulses are connected to conditioned processes in the cortex, which choose the appropriate course for the subsequent reaction. This reaction causes the thalamic processes to be stimulated. The thalamic processes may be prepared to discharge after they have begun to function. A unique combination of thalamic neurons firing creates the given emotional expression. Then, these neurons release abruptly and vigorously. Cannon noted that these neurons reside in and around the thalamus and are close to relaying information into sensory systems from the periphery to the brain. Additionally, these neurons fire in a particular order; they enervate muscles

while simultaneously stimulating visceral afferent pathways, which in turn stimulate afferent pathways into the cortex by irradiation and direct association. (Lang, 1994)

2.6.3 *Activation Theory*

Stalker (1961) proposed a theory named activation theory and observed that Emotions describe situations of boosted arousal in ways that are qualitatively distinct types of mental, physiological, and behavioral processes for the mental provocation it is essential to be effectively motivated. According to Lindsley, activating the brain's cortical areas from the reticular system eventually excites the organism. The emotional provocation could stimulate the reticular portion of the intellect residing in the brainstem, delivering signals to the brain and thalamus to arouse emotions. An overview of the outdated emotional idea of energy mobilization is a frequent activation theory (Lang, 1994). Early studies demonstrated how emotions like anger and terror help the body prepare for emergency responses.

2.6.4 *Evolutionary Theory of Emotion*

Campbell (1997) offered that emotions are developed because they are changeable and adapted to social beings and animals at birth. Feelings of love, devotion, fear and hate are different feelings. The feeling of love and affection guides people to search for their partners. Moreover, from any danger or fear, people self-defense and change their place to protect themselves from the danger, or they fight if they are vital to compete against their fear. Emotions also work positively in the related environment, which helps people improve themselves for survival and success. Not every person feels the emotions of people. Only some people can understand their emotions and feelings, and those people play an essential role in the environment for the survival and safety of people.

2.7 *Conceptual Framework*

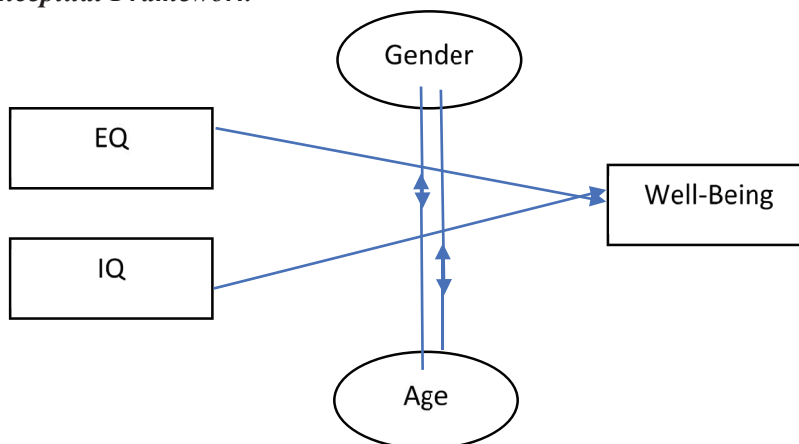


Figure 1: Conceptual Framework

2.8 Hypotheses

H3: Gender moderates the relationship between EQ and psychological well-being.

H4: Gender moderates the relationship between IQ and psychological well-being.

H5: Age moderates the relationship between EQ and psychological well-being.

H6: Age moderates the relationship between IQ and psychological well-being.

3. Methodology

3.1 Data & variables

The report follows the primary facts-gathering methods. The study variables are IQ and EQ independent variables, and psychology is the dependent variable. The records have been accumulated through the survey. The survey was ready on Google Forms, and it was closed-ended questions. The unipolar Likert scale was employed in this survey. Scales comprising 1, 2, 3, 4, and 5, from the least to the highest level of agreement was used.

3.2 Population

The information was gathered from university students. The survey was taken from different areas of Pakistan: Nawabshah, Sanghar, Karachi, Lahore etc. We targeted university students and collected a sample from a wide range of data from different cultures.

3.3 Inclusion Criteria

Samples would be taken from university students who were students of different universities. Data could have been obtained from university students via online surveys about the impact of IQ and EQ on student well-being.

3.4 Sample and Sampling Technique

The sample size is 200. The convenience sampling strategy to pick up the sample indicated that the questionnaire was filled out at certain places. The purposive sampling technique was used for collecting information since the respondents fulfilled the criteria.

3.5 Statistical Analysis

Descriptive statistics, including the questionnaire's reliability, demographics' frequencies, averages and dispersion, are computed. Moreover, correlation analysis is carried out to establish the association among variables. In order to compute impact assessment, a multiple regression analysis is executed. Furthermore, moderation analysis is also carried out to gauge whether being male or female and different age groups influence the relationship

between the variables.

4. Results & Discussion

4.1 Reliability Statistics

The reliability statistics have been used to assess the reliability or internal consistency of items to measure the constructs in the context of the ongoing research. The literature showed that Cronbach alpha values indicated the construct's reliability. EQ and psychological well-being results are shown below in Table 1. The results showed that EQ, IQ, and psychological well-being had achieved their reliability based upon Cronbach alpha values of 0.760, 0.836, and 0.886, considered good as they are greater than 0.7 – the benchmark.

Table 1
Reliability Statistics

Variables	Cronbach's Alpha	No of items
EQ	.760	8
IQ	.836	8
PWB	.886	8

4.2 Demographics

The Demographics table shows that the overall number of respondents was 200, dominated by male respondents comprised 54.5% of the sample. In the age matrix, respondents aged 21-23 are the highest (37%), followed by 18-20 (27.5%), which depicts that 64.5% of the respondents are youngsters.

Table 2
Demographic Statistics

	Classes	Frequency	Per cent
Age	18-20	55	27.5
	21-23	74	37.0
	24-26	25	12.5
	27-29	22	11.0
	30+	24	12.0
	Total	200	100.0
Gender	Male	109	54.5
	Female	91	45.5
	Total	200	100.0

4.3 Descriptive Statistics

The descriptive statistics table shows that the average score of all the variables is greater than 3, which falls in the upper half on the five-point Likert scale and is considerable. The spread about the average score (standard deviation) is less than one, and in one case, it is also considerable. So far, the distribution statistics are concerned; both are close to zero, which depicts that the variables are normally distributed.

Table 3
Descriptive Statistics

	N	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
EQ	200	3.2375	.82049	.673	-.511	.172	.093	.342
IQ	200	3.3888	.90502	.819	-.665	.172	.200	.342
PWB	197	3.5457	1.00785	1.016	-.850	.173	.011	.345
Valid N (list-wise)	197							

4.4 Correlation Analysis

The correlation analysis, as shown in the table below, describes that the association of EQ and IQ with psychological well-being are positive and significant at a 99% confidence interval. Every incremental score in EQ and IQ has a positive association with the psychological well-being score of university students.

Table 4
Correlations

		PWB	EQ	IQ
PWB	Pearson Correlation	1	.711**	.810**
	Sig. (2-tailed)		.000	.000
	N	200	200	200
EQ	Pearson Correlation	.711**	1	.702**
	Sig. (2-tailed)	.000		.000
	N	200	200	200
IQ	Pearson Correlation	.810**	.702**	1
	Sig. (2-tailed)	.000	.000	
	N	200	200	200

** . Correlation is significant at the 0.01 level (2-tailed).

4.5 Regression Analysis

The table below shows that the model's goodness of fit is 69.6%, i.e., changes in the IQ and EQ scores translate to 69.6% changes in the psychological well-being score.

Moreover, the R-square and adjusted R-square are closer, i.e., the difference between the R-square (.696) and the adjusted R-square (.693) is less than 5%, which endorses the adequacy of the sample size.

Table 5
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.834 ^a	.696	.693	.55515

a. Predictors: (Constant), IQ, EQ

The ANOVA result shows that the overall model is significant as $F=225.928$ ($F \geq 4$), followed by the $p\text{-value}=0.000$ ($p < 0.01$). It also shows the model's goodness of fit (R-square; sum square of regression to sum square of total ratio) is significant.

Table 6
ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	139.256	2	69.628	225.928	.000 ^b
	Residual	60.713	197	.308		
	Total	199.969	199			

a. Dependent Variable: PWB
b. Predictors: (Constant), IQ, EQ

The regression table shows the gradients of the exogenous variables. If one unit of IQ and EQ score increases, the corresponding psychological well-being score will increase by 0.679 and 0.343 units, respectively. Both variables are significant as their t-values are greater than 2, followed by their p-values are less than 0.01. moreover, there is no multicollinearity issue as the VIF – variance inflationary factor is less than 5.

Table 7
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.126	.169		.746	.457		
1 EQ	.343	.067	.281	5.092	.000	.507	1.974
IQ	.679	.061	.613	11.112	.000	.507	1.974

a. Dependent Variable: PWB

4.6 *Gender as a Moderator*

An important investigation is whether the relationship between EQ and IQ with psychological well-being differs concerning gender, i.e., for male and female respondents. Gender does not moderate the relationship of EQ and IQ with psychological well-being because the same results were obtained (positive and significant; p -value <0.01) for male and female respondents when the data was segregated on the basis of gender.

Table 8
Coefficients^a

Gender	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
Male	(Constant)	.198	.220		.902	.369		
	1 EQ	.292	.101	.248	2.879	.005	.381	2.623
	IQ	.694	.095	.627	7.280	.000	.381	2.623
Female	(Constant)	-.036	.268		-.133	.895		
	1 EQ	.411	.092	.318	4.453	.000	.668	1.498
	IQ	.678	.079	.612	8.561	.000	.668	1.498

a. Dependent Variable: PWB

4.7 *Age as a Moderator*

Another important investigation is whether the relationship between EQ and IQ with psychological well-being differs concerning different age groups. The data set was segregated based on age groups. The age group was found to be moderating for EQ. The IQ for all age groups was found significant; therefore, it does not moderate the relationship. On the other hand, EQ was found significant for age groups 21-23 ($p<0.000$) and 30+ ($p<0.05$), whereas insignificant for the rest of the age groups ($p>0.05$).

Table 9
Coefficients^a

Age	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
18-20	(Constant)	.226	.277		.817	.418		
	1 EQ	.188	.127	.153	1.478	.145	.401	2.492
	IQ	.793	.108	.758	7.337	.000	.401	2.492
21-23	(Constant)	.477	.263		1.815	.074		
	1 EQ	.660	.106	.587	6.224	.000	.500	2.000
	IQ	.320	.101	.300	3.178	.002	.500	2.000
24-26	(Constant)	.614	.535		1.149	.263		
	1 EQ	.056	.159	.047	.355	.726	.735	1.360
	IQ	.837	.137	.818	6.120	.000	.735	1.360
27-29	(Constant)	.216	.511		.423	.677		
	1 EQ	.087	.215	.072	.404	.690	.467	2.140
	IQ	.869	.194	.795	4.482	.000	.467	2.140
30+	(Constant)	-1.764	.529		3.337	.003		
	1 EQ	.436	.190	.262	2.297	.032	.617	1.620
	IQ	1.081	.170	.726	6.351	.000	.617	1.620

a. Dependent Variable: PWB

5. Discussion

The study aimed to investigate the relationship between EQ, IQ, and students' psychological well-being. EQ positively impacted psychological well-being, and IQ also had positive impacts. Two moderators were used in this research: gender and Age. Gender was not moderating here. The EQ was higher in females as compared to males. However, some age groups were moderating here because people's emotions changed with age.

EQ and IQ, both positively impacted students' psychological well-being. This result is consistent with previous research indicating a relationship between emotional intelligence, cognitive abilities, and overall well-being. Strickland et al. (2019), Higher levels of emotional and intellectual intelligence are associated with better psychological well-being among university students, according to the correlation study, which found a substantial positive relationship[p] between EQ, IQ, and psychological well-being scores.

Moreover, the study also discovered that the association between EQ, IQ and psychological well-being was not moderated by gender. Both EQ and IQ have a favorable effect on psychological well-being, independent of gender. This finding is similar to the Cazan and Năstasă (2015) It has been demonstrated that emotional intelligence varies by gender and has implications for well-being. Still, this is consistent with other studies showing

comparable emotional intelligence and well-being levels in genders. Strickland et al. (2019).

Furthermore, Age was found significant for age groups 21-23 and 30+, whereas insignificant for the rest of the age groups. Their fore, it found to moderate with some age groups with the relationship between EQ and psychological well-being, and results are similar to the Strickland et al. (2019), but not with IQ and psychological well-being across all age groups.

Overall, the study's findings provide more support to university students with EQ, IQ and psychological well-being. In order to improve students' mental health and quality of life, they pay attention to the necessity of interventions and educational initiatives to strengthen these skills. Furthermore, the results indicate that age and gender must be considered when creating these kinds of treatments to guarantee their efficacy across a range of demographics.

6. Conclusion, Limitations & Recommendation

6.1 Conclusion

Better psychological well-being resulted from EQ, while depression and anxiety disorders were more likely to affect those with lower EQ scores. On average, older persons were better at managing their emotions and had higher levels of EQ, but emotional skills could also boost EQ. The results concerning the current study on EQ and student psychology well-being determined a strong positive association between psychological health and IQ. As a result, this study shed light on how EQ affected students' mental well-being, personal or social entrepreneurship, academic success, and psychological health in general. This significantly affected research since it showed how EQ development might improve teenagers' social well-being.

The study investigated the relationship between students' personalities, EQ, and other psychological health indicators. EQ was significant in a student's success and personal well-being. In addition to intelligence, social skills and emotional maturity aided in adjustment and life success. Additionally, it attempts to look into the connections between IQ and EQ scores and differences in student demographics such as gender, age, family income, and discipline. While keeping in mind that, in our cultural context, there was a lack of studies examining the impact of EQ and IQ on students' psychological well-being. These gaps need to be gradually filled by empirical study. Consequently, the current study aimed to examine the connection between Students' psychological well-being, IQ, and EQ, all measured using a quantitative approach.

6.2 *Limitations*

This study focused on the impacts of IQ and EQ on students' psychological well-being. Still, other related variables like social quotient, spiritual quotient, and adversity quotient were not included. Other researchers would study these variables in similar geographic and demographic conditions. The second limitation was the demographics in this study. We included only university students. Considering the population of Pakistan, i.e., over 200 million, we could not generalize results according to the whole population and other demographic areas like working class, school students, and aged population. Hence, future researchers could study other demographic and geographic areas.

6.3 *Recommendation*

The survey of this research included the university students of different cities, i.e., Nawabshah, Sanghar, Karachi and Lahore, through online surveys for the data collection of IQ, EQ and psychological well-being. Moreover, it was found that the IQ of students was the same as since childhood. The emotions of the people were changed from time to time. Thus, it was recommended that we work on different age factors, study IQ, and develop scales for measuring IQ in the future.

References

- Bar-On, R. (2004). The Bar-On Emotional Quotient Inventory (EQ-i): Rationale, Description, and Summary of Psychometric Properties. *Measuring Emotional Intelligence: Common Ground and Controversy*.
- Beldoch, M. (2017). Sensitivity to expression of emotional meaning in three modes of communication. In *Social Encounters: Contributions to Social Interaction. 1*. 31-42.
- Campbell, S. (1997). Emotion as an explanatory principle in early evolutionary theory. *Studies in History and Philosophy of Science Part A*, 28(3). 453-473. [https://doi.org/10.1016/S0039-3681\(96\)00018-0](https://doi.org/10.1016/S0039-3681(96)00018-0)
- Cazan, A.-M., & Năstasă, L. E. (2015). Emotional Intelligence, Satisfaction with Life and Burnout among University Students. *Procedia - Social and Behavioral Sciences*, 180. 1574-1578. <https://doi.org/10.1016/j.sbspro.2015.02.309>
- Colom, R., Karama, S., Jung, R. E., & Haier, R. J. (2010). Human intelligence and brain networks. *Dialogues in Clinical Neuroscience*, 12(4). 489-501. <https://doi.org/10.31887/dcns.2010.12.4/rcolom>

- Elfenbein, H. A. (2022a). Annual Review of Psychology Emotion in Organizations: Theory and Research. *Annu. Rev. Psychol.* 2023, 74. 489-517.
- Elfenbein, H. A. (2022b). Emotion in Organizations: Theory and Research. *SSRN Electronic Journal* 74. 489-517. <https://doi.org/10.2139/ssrn.4028773>
- Elfenbein, H. A. (2023). Emotion in Organizations: Theory and Research. *In Annual Review of Psychology.* 74. 489-517. <https://doi.org/10.1146/annurev-psych-032720-035940>
- Eliot, J. A. R., & Hirumi, A. (2019). Emotion theory in education research practice: an interdisciplinary critical literature review. *Educational Technology Research and Development*, 67(5). 1065-1084. <https://doi.org/10.1007/s11423-018-09642-3>
- Goleman, D. (2003). Working with Emotional Intelligence (Book). In BusinessSummaries.com.
- Gottfredson, L. S. (2008). Of what value is intelligence? In WISC-IV applications for clinical assessment and intervention.
- Guerra-Bustamante, J., León-Del-Barco, B., Yuste-Tosina, R., López-Ramos, V. M., & Mendo-Lázaro, S. (2019). Emotional intelligence and psychological well-being in adolescents. *International Journal of Environmental Research and Public Health*, 16(10). <https://doi.org/10.3390/ijerph16101720>
- Hascher, T. (2010). Learning and emotion: Perspectives for theory and research. *European Educational Research Journal*, 9(1). 13-28. <https://doi.org/10.2304/eerj.2010.9.1.13>
- Hutabarat, Z. S., Riady, Y., Amral, S., Sumiharti, S., Susanti, H., Saputra, T., Affrian, R., & Taufan, A. (2023). Teaching Practice Program in College of Education – Creativity, Emotional Intelligence and Locus of Control. *Jurnal Kependidikan: Jurnal Hasil Penelitian Dan Kajian Kepustakaan Di Bidang Pendidikan, Pengajaran Dan Pembelajaran*, 9(1). 244-257. <https://doi.org/10.33394/jk.v9i1.6416>
- Izard, C. E. (2009). Emotion theory and research: Highlights, unanswered questions, and emerging issues. *In Annual Review of Psychology.* 60, 1-25. <https://doi.org/10.1146/annurev.psych.60.110707.163539>
- Jauk, E., Benedek, M., Dunst, B., & Neubauer, A. C. (2013). The relationship between intelligence and creativity: New support for the threshold hypothesis by means of empirical breakpoint detection. *Intelligence*, 41(4), 212-221. <https://doi.org/10.1016/j.intell.2013.03.003>

- Lang, P. J. (1994). The varieties of emotional experience: A meditation on James-Lange theory. Special Issue: The centennial issue of the *Psychological Review*. *Psychological Review*, 101(2), 211.
- Lange, J. C. (1984). National Development and News Values: the Press in the Third World and the West. *Gazette (Leiden, Netherlands)*, 33(2), 69-86. <https://doi.org/10.1177/001654928403300201>
- Langston, T. S. (2001). The Presidential Difference: Leadership Styles from FDR to Clinton. *Political Science Quarterly*, 116(1), 131-132. <https://doi.org/10.2307/2657823>
- Legg, S., & Hutter, M. (2007). A Collection of Definitions of Intelligence. *Frontiers in Artificial Intelligence and Applications*, 157, 17.
- Li, C., Qiao, K., Mu, Y., & Jiang, L. (2021). Large-Scale Morphological Network Efficiency of Human Brain: Cognitive Intelligence and Emotional Intelligence. *Frontiers in Aging Neuroscience*, 13, 605158. <https://doi.org/10.3389/fnagi.2021.605158>
- Mashar, R., & Astuti, F. (2022). Correlation between Parenting Skills, Children's Emotional and Intelligence Quotient with School Readiness. *JPUD - Jurnal Pendidikan Usia Dini*, 16(2), 215-223. <https://doi.org/10.21009/jpud.162.02>
- Mayer, J. D., DiPaolo, M., & Salovey, P. (1990). Perceiving Affective Content in Ambiguous Visual Stimuli: A Component of Emotional Intelligence. *Journal of Personality Assessment*, 54(3-4), 772-781. <https://doi.org/10.1080/00223891.1990.9674037>
- Morris, M. D. (1979). Measuring the condition of the world's poor. The physical quality of life index. *Population and Development Review*, 7(4), 716-717. <https://doi.org/10.2307/1972820>
- Nakano, T. D. C., Ribeiro, W. D. J., & Virgolim, A. M. R. (2021). Relationship between creativity and intelligence in regular students and giftedness students. *Psico-USF*, 26(1), 103-116. <https://doi.org/10.1590/1413-82712021260109>
- Rainie, L., Anderson, J. (2017). Experts on the Future of Work, Jobs Training and Skills | Pew Research Center. In <https://www.pewinternet.org/2017/05/03/the-future-of-jobs-and-jobs-training/>.
- Robbins, M., Judge, A., & MacLachlan, I. (2009). SiRNA and innate immunity. *Oligonucleotides*, 19(2). 89-102. <https://doi.org/10.1089/oli.2009.0180>

- Schutte, Nicola S., John M. Malouff, and Navjot Bhullar. "The assessing emotions scale." *Assessing emotional intelligence: Theory, research, and applications*. Boston, MA: Springer US, 2009. 119-134.
- Segal, J., Smith, M., Robinson, L., & Shubin, J. (2021). Improving Emotional Intelligence (EQ) - HelpGuide.org. Retrieve: <https://www.helpguide.org/articles/mental-health/emotional-intelligence-eq.htm>.
- Segal, J., Smith, M., Robinson, L., & Shubin, J. (2023). Improving Emotional Intelligence (EQ) What is emotional intelligence or EQ? HelpGuide.Org. Retrieve: <https://www.helpguide.org/articles/mental-health/emotional-intelligence-eq.htm>.
- Seligman, M. E., & Csikszentmihalyi, M. (2000). Positive psychology. An introduction. *The American Psychologist*, 55(1), 5. <https://doi.org/10.1037/0003-066X.55.1.5>
- Slovak, P., Antle, A., Theofanopoulou, N., Roquet, C. D., Gross, J., & Isbister, K. (2023). Designing for Emotion Regulation Interventions: An Agenda for HCI Theory and Research. *ACM Transactions on Computer-Human Interaction*, 30(1), 1-51. <https://doi.org/10.1145/3569898>
- Sotvedt, S. (2014). Emotional Intelligence 2.0 - summary. *eBook*.
- Stalker, H. D. (1961). The genetic systems modifying meiotic drive in drosophila Paramelanica. *Genetics*, 46(2), 177. <https://doi.org/10.1093/genetics/46.2.177>.
- Strickland, H. P., Cheshire, M. H., & Neal, L. (2019). Measured Emotional Intelligence in RN to BSN Education. *Teaching and Learning in Nursing*, 14(3), 145-148. <https://doi.org/10.1016/j.teln.2019.01.003>
- Su, H., Zhang, J., Xie, M., & Zhao, M. (2022). The relationship between teachers' emotional intelligence and teaching for creativity: The mediating role of working engagement. *Frontiers in Psychology*, 1, 1014905. <https://doi.org/10.3389/fpsyg.2022.1014905>
- Wechsler, D. (1944). The psychologist in the psychiatric hospital. *Journal of Consulting Psychology*, 8(5), 281. <https://doi.org/10.1037/h0058226>
- Wigtill, C. J., & Henriques, G. R. (2015). The Relationship Between Intelligence and Psychological Well-Being in Incoming College Students. *Psychology of Well-Being*, 5(1). <https://doi.org/10.1186/s13612-015-0029-8>

Questionnaire

1 is the lowest, and 5 is the highest level of agreement over the Likert scale.

Age	18-20	21-23	24-26	27-29	30+
Gender	Male		Female		
When I experience a positive emotion, I know to make it last?	1	2	3	4	5
Emotions are one of the things that to make my life worth living?	1	2	3	4	5
I arrange events to others enjoy?	1	2	3	4	5
I find it hard to understand non-verbal message of other people?	1	2	3	4	5
I accept good things to happen?	1	2	3	4	5
When I am in a positive mood, solving problem is easy for me?	1	2	3	4	5
When I am face with a challenge, I gave up because believe I will fail?	1	2	3	4	5
It is difficult for me to understand why people feel the way they do?	1	2	3	4	5
I do not become defensive when criticized?	1	2	3	4	5
I can stay calm under pressure?	1	2	3	4	5
I am positive?	1	2	3	4	5
I can freely admit to making a mistake?	1	2	3	4	5
I manage anxiety, stress, anger, and fear for growth?	1	2	3	4	5
I maintain a sense of humor?	1	2	3	4	5
I try to see things from another's perspective?	1	2	3	4	5
I recognize how my behavior affects others?	1	2	3	4	5
I felt that others Love me and appreciate me?	1	2	3	4	5
My life was well balanced between my family, personal and school activity?	1	2	3	4	5
I am able to find answers my problems without trouble?	1	2	3	4	5
I smile easily?	1	2	3	4	5
I have goals and ambitions?	1	2	3	4	5
I have self-confidence?	1	2	3	4	5
I am true to my self being natural at all times?	1	2	3	4	5
I feel emotionally balanced?	1	2	3	4	5



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