

An Integrated Framework of Student Mental Well-Being: Examining the Role of Psychological Resilience and Support Synergy

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Abstract

This research examines the impact of the different stakeholders on student well-being by integrating school environments, family support, teacher facilitation, counselling, integrated support synergies and psychological resilience into a multi-stakeholder framework. A survey is developed by using a 5-point Likert scale to collect data from 463 students, and the data was analysed using SPSS and AMOS Structural Equation Model. This research showed that the four factors of school environment, family support, teacher facilitation, and counselling support significantly affect ISS, with counselling support being the most significant. Psychological Resilience (PR) partially mediates the relationship between Integrated Support Synergy (ISS) and student well-being, as the positive contribution of PR helps explain how coordinated support systems can directly or indirectly influence students' well-being. The ISS of support systems helped to moderate the positive association between PR and student mental well-being. The findings suggest that PR will positively contribute to the well-being of students in relation to ISS that are coordinated/supportively more integrated. This research contributes to the existing literature by providing a comprehensive theoretical framework for understanding the combined impact of multiple support systems on the well-being of students. The present study shows that more cooperation is needed between all stakeholders and that more emphasis should be placed on building resilience in the educational environment to facilitate positive mental health outcomes of the students.

Keywords: Student Mental Well-being; Integrated Support Synergy; Psychological Resilience; School Environment; Family Support; Teacher Facilitation; Counselling Support; Structural Equation Modelling.

1. Introduction

In recent years, increased attention has been paid to understanding the determinants of student mental health in the context of education. This section sets out the background to the study and presents the important variables on which the proposed framework is based.

1.1 Background of the Study

In the last few years, many schools have focused on the emotional health of their students. The emotional health of school-age children and youth is one part of the overall success in education and the development of well-rounded individuals. The World Health Organization defines emotional health as being able to deal with the stresses of life, working effectively in a job, and helping others in the community (World Health Organization, 2010). This view aligns with the findings in the resources referenced above. The research cited supports the idea that good emotional health contributes to the development of positive behaviours, resilience, and academic achievement.

There has been a marked increase in the number of young people reporting concerns related to their mental health. Kessler et al. (2005) found that many mental disorders start in the teenage years. Patel et al. (2007) reported that

youth mental health is a global concern that needs immediate attention. Collishaw et al. (2004) indicated that poor adolescent mental health continues to become worse over time. West and Sweeting (2003) found that psychological distress was increasing in adolescents and young adults. Based on these findings, there is a strong indication that schools are now experiencing increased pressure from their students' emotional health.

Poor emotional health has both immediate and long-term effects on the academic performance and behavioural problems of students. Students who are emotionally distressed are more likely to perform poorly academically, act out inappropriately, and have lower satisfaction levels in life. This study indicates that a poor quality of emotional health will negatively affect educational achievement and social togetherness. The poor quality of emotional health will exhibit itself as a negative outcome for students, showing a need to identify the causes of student mental health issues and determine how they can be addressed.

In this study, it is stated that many different factors, which work together, establish a student's mental well-being, as opposed to just one factor being solely responsible for creating a healthy mental state. A student's school environment is a significant contributor to establishing psychological safety, student engagement, and academic motivation (Wang & Degol, 2016). Suldo et al (2011) demonstrated that subjective perception of well-being will predict achievement in the future. Therefore, providing a positive school environment is essential to understanding how Institutional contexts affect student well-being.

Family support is an important contributor to establishing emotional safety, support, and resources for coping with stress. Family support is one of the most important contributors to student mental well-being due to emotional security and safety against a student's external stressors. Teacher support is also important because it provides emotional support within the classroom when teachers encourage participation and build confidence in their students. Counselling services also contribute to the overall system of emotional support that improves student mental well-being by addressing emotional issues, increasing emotional stability, and giving individuals a sense of belonging. A student's mental well-being is extremely affected by the support that they receive from these four different institutions.

The level of individual psychological resilience has been widely recognised as critical in establishing student mental well-being. Luthar et al. (2000) considered resilience to be an adaptive process; this process allows individuals to adapt positively even when faced with challenges. Fergus and Zimmerman (2005) discussed resilience as an ongoing process that helps an individual to overcome risk factors. Masten (2014) explained that a comprehensive view of resilience would assist in the development of a holistic understanding of how an individual's resilience supports the child or adolescent in developing adaptive ability. Consistent with these notions, the uploaded study proposes that resilience acts as a mediator through which the support systems contribute to student mental well-being.

Although these factors have recognised importance, little research has examined these factors in conjunction with the other factors that contribute to establishing student mental well-being. Student mental well-being is a multidimensional construct that is affected by the interaction of the four support systems. The uploaded framework identifies that an integrated support synergy acknowledges that all four support systems (school, family, teacher, and counselling) work together. This framework provides a clearer understanding of how multiple sources of support contribute to the mental well-being of students.

Considering that an integrated model that examines school, family, and psychological factors together is necessary for developing an effective support system for students' welfare, this study proposes the development of a model that provides a comprehensive view of how various support systems and resilience interact to contribute to improving the mental well-being of students. By developing an integrated model that looks at all aspects that contribute to student mental well-being, this study should enhance our understanding of how an integrated support system improves student achievement outcomes.

1.2 Research Gap

Previous studies focused on factors associated with school, family, teacher, and resilience as individual factors; however, few studies include a coordinated approach to how these factors combine to impact student mental health

outcomes. The mediating role of resilience when looking at these factors together is also poorly understood and has not been studied extensively. Additionally, very few studies have considered the moderating effect of systemic support on the processes involved with fostering resilience and improving student mental health. Therefore, there is a need for a comprehensive model to identify how all types of support, resilience, and student mental health work together to support student success.

1.3 Contributions of the Study

Several key findings of this research improve on existing knowledge about student mental health. First, this study develops an integrated model that incorporates previous research findings on the impact of the school environment, parental support, teacher-taught support, and counseling support. Second, this study introduces the concept of an Integrated Support Synergy (ISS) allowing for a broader explanation of the cooperative nature of multiple support systems (e.g., teacher, family, counseling). Third, this study examines how psychological resilience helps to mediate the relationship between coordinated support systems and student mental health. Fourth, this study extends existing models by including the moderating effect of integrated support synergies (ISS) on the relationships between support systems and student mental health, thereby providing a clearer understanding of how these support systems jointly enhance student mental health.

1.4 Objectives of the Study

Based on the preceding discussion, this study will investigate how support systems, psychological resilience, and student mental health interact with each other. The specific objectives of the study are:

1. To explore how support systems influence the integration of support synergies.
2. To identify if integrated support synergies contribute to psychological resilience.
3. To explore how psychological resilience affects student mental health.
4. To identify if psychological resilience mediates between support systems and student mental health.
5. To determine whether the relationship between integrated support synergy and psychological resilience moderate's student mental health.

1.5 Organization of the Paper

This document is structured as follows: The second section contains a literature review on Student Mental Well-Being and Support Systems; the conceptual framework and testable hypotheses are detailed in the third section; the methodology for this study can be found in Section Four; Section 5 will report on the study's empirical results and an analysis of those results; Section 6 will discuss the study's findings based on existing literature and provides implications for practice; lastly, Section 7 will provide a conclusion of the study and recommendations for future research.

2. Literature Review

The literature surrounding student mental well-being has highlighted both contextual and psychological factors that can shape favourable educational outcomes. Studies indicate that students' well-being is not a function of one variable, but rather a combination of family-based, school-based, and personal resources working together. This review will present a framework for understanding student mental well-being and its relationship to the following six key constructs: student mental well-being, school environment, family support, teacher facilitation, counselling support, and psychological resilience.

2.1 Student Mental Well-Being

Many studies have suggested that student mental health is multidimensional and includes emotional, social, adaptive, and academic aspects. These studies have shown that student mental health is highly correlated with student academic engagement and that a positive academic experience is essential for overall student well-being. Students who experience high levels of academic stress have lower levels of mental well-being than those who do not experience stress from their studies. Students who have a good sense of well-being have a positive influence

on their academic success, regardless of burnout or academic engagement. Good well-being supports engagement in the academic setting over time. In addition to the positive impact of student well-being on academics, there is a reciprocal relationship between well-being and academic success in adolescence. Taken together, the studies indicate that student well-being is a product of healthy conditions and also provides the resources necessary to adapt effectively to academic life.

2.2 School Environment

Research suggests that students' psychological well-being is influenced by the climate of their schools. As stated by Wang and Degol (2016), the influence of school climate on student academic success, behaviour, and emotional state is mediated via many means. For instance, researchers Aldridge et al (2016) found that student perceptions of the school climate are strongly correlated with their level of well-being, resilience, and identity development. Further, Aldridge and McChesney (2018) determined that there was a strong relationship between psychosocial climate and adolescent mental health in the overall research on this topic. They also noted that there appears to be a strong association between positive psychosocial climate and adolescent mental health, although the mechanisms that create these associations may be multifaceted. Additionally, McNeely et al. (2002) revealed that school connection functions to promote positive development in adolescents. Overall, research indicates that safe, inclusive, and connected school environments provide a solid foundation for student well-being.

2.3 Family Support

For students to be "emotionally/mentally stable", families must provide them with love and comfort; help them make the best choices possible; guide their decisions; and share resources (e.g., coping skills) to further develop these aspects (Offer, 2013). The amount of time a parent spends with their child (Chiang et al., 2023), and specifically how much time a parent spends doing activities with their child (Zaborskis et al., 2022) contributes to the overall emotional health/well-being of the parent and child (as well as any siblings) participating in that shared experience. Healthier family functioning not only contributes to higher levels of mental health and school adjustment for children (Shek, 1997) but also serves as a buffer against psychological symptoms associated with low self-efficacy/poor self-worth for both children and parents through positive interaction and support (Qian et al., 2024). Therefore, family-based support not only serves to promote emotional balance but also helps children achieve adaptive behaviours needed to be successful in academic settings.

2.4 Teacher Facilitation

The role of teachers in student development is of paramount importance; they provide emotional structure for learning environments, offer guidance, and help students develop confidence to successfully address challenges presented in class. According to Lei et al. (2018), teacher support is significantly associated with positive academic emotion and negatively associated with negative academic emotion. Teacher Connectedness was also identified as a significant health resource for adolescents' subjective well-being (García-Moya et al. 2015). Additionally, Kristensen and Jenö (2024) reported that teacher autonomy support is positively associated with students' perceived mental well-being and negatively associated with academic stress trajectories. Research by Jiang et al. (2022) showed that teacher-student relationships are positively correlated with school satisfaction and student engagement. Ibrahim and El Zaatari (2020) identified supportive teacher-student relationships as being strongly correlated with adolescent well-being. Teacher facilitation of student development is not limited to instructional practices. Teacher facilitation also includes providing emotional support, relational safety and reinforcing coping mechanisms.

2.5 Counselling Support

Counselling support provides students experiencing emotional, personal, or academic challenges a structured method of psychological support. In a systematic review of university counselling services, Cerolini et al. (2023) conclude that these services are a fundamental component of university mental health assessment and intervention. The evidence base for the value of university counselling services, and the need for more effective outcome monitoring, was also established in the Collins et al. (2025) study. College counselling services are considered a high-impact student support service that positively contributes to student and institutional well-being (LeViness,

2024). In their study, Bishop (2016) showed that counselling use was associated with higher retention rates among at-risk students. Also, psychological counselling in higher education has considerable potential to enhance mental health and academic performance (Pizzo et al., 2024). Overall, the body of literature indicates that counselling support is a vital resource for students, which can help them manage their stress and promote their overall well-being.

2.6 Psychological Resilience

Psychological resilience is the ability to adapt positively to difficulties, stress and uncertainty. Hartson et al. (2023) showed that resilience positively correlates with college students' well-being and acts as a buffer against stressors. Dong et al. (2024) demonstrated that in college students, resilience mediates the connection between coping styles and psychological well-being. Wang et al. (2024) discovered that the resilience profile of students correlates with their well-being, academic experiences, and attitudes toward seeking out help. Dalmış et al. (2025) stated that through subjective well-being, psychological resilience has an inverse relationship with future anxiety. Lastly, Sha and Heller (2024) indicated that students who engage in activities that promote resilience can expect to experience higher levels of psychological well-being. The existing literature supports that resilience acts as an essential link between the supportive influences of external systems and the achievement of positive mental health outcomes.

As discussed above, multiple support systems influence the mental well-being of college students, including the school environment, familial support, teacher facilitation, the availability of counselling services and psychological resilience. Previous studies have typically examined each of these factors in isolation, and little attention has been given to how they interact and integrate. Furthermore, relatively little research has been done on how resilience acts as a mediating mechanism or how coordinated support systems may have multiple conditional influences on resilience. To address these gaps in the literature, this study will develop a comprehensive framework to explore the direct, mediating, and moderating relationships among these constructs.

3. Conceptual Framework and Hypotheses

With reference to the previous literature review, this research study aims to explore the relationships between factors that influence stakeholder support (support systems) and the influence of various combined factors on students' mental well-being. Several factors contribute to students' well-being, including their surroundings (school) and relationships (family). The effects of these multiple influences on students' well-being are still not fully understood. To gain a clearer understanding, this study employs an integrated approach that focuses on developing a Dynamic Support Interaction Model (DSIM) to assist it in its examination of these variables.

Through this research, the development of the DSIM provides an insight into the relationship between the elements of family, teachers, the environment of school, and the counsellor, and how they come together to form a synergistic effect on support for the students. Research supports the importance of the combined effects of the support systems in terms of improvement for the students (Aldridge & McChesney, 2018). In addition, the DSIM model will also assess whether or not there is a relationship between the synergistic effect on psychological resilience and subsequent links to mental well-being (Luthar et al., 2000) and whether or not the relationships between psychological resilience and well-being differ, depending on the level of support integration (Masten, 2014).

Direct Effects

Several research investigations have demonstrated that supportive settings help develop the psychological health and coping skills of students. A supportive school environment establishes emotional security and engagement opportunities (Wang & Degol, 2016). Family support is thought to provide emotional stability and insulation from stress (Zaborskis et al., 2022). Teacher facilitation, by way of direction and encouragement, has been shown to bolster students' confidence and adaptive capabilities (Lei et al., 2018). Additionally, counselling support enables students to cope with their emotional and mental struggles (Cerolini et al., 2023).

Support systems do not function independently; rather, they work in conjunction to provide an integrated approach to supporting students in their emotional and academic development through integrated support synergy. The following hypotheses support this premise:

H1: School Environment impacts Integrated Support Synergy.

H2: Family Support impacts Integrated Support Synergy.

H3: Teacher Facilitation impacts Integrated Support Synergy.

H4: Counselling Support impacts Integrated Support Synergy.

Mediating Effect

Psychological resilience is a well-known predictor of how well people manage stressors and hardships (Fergus & Zimmerman, 2005). Researchers have indicated that resilience functions as a medium through which external sources of support can affect an individual’s mental health or well-being (Luthar et al., 2000) and the integrated-support-synergy developmental process offers a method for developing psychological resilience through consistent and reinforced support.

Additionally, researchers view psychological resilience as having a positive relationship with student mental health and overall well-being, as resilient people are better able to continue to maintain their emotional balance and adapt to the challenges that come their way (Hartson et al., 2023). The following hypotheses will be examined:

H5: Integrated Support Synergy has a statistically significant effect on Psychological Resilience and

H6: Psychological Resilience has a statistically significant effect on Student Mental Well-Being.

Moderating Effect

Alongside identifying the primary relationships present, this study will also investigate if the psychological resilience-student mental well-being relationship is influenced by the level of coordinated support between systems, which could create Integrated Support Synergy. Through this process of determining how much assistance is given and how coordinated these various forms of support are, we may identify the strength of this relationship. Specifically, we will hypothesise that the effect of Resilience on Mental Well-Being is most pronounced when coordinated support systems provide their services through one another (Wang, Wang, And Verstraete 2024).

In summarising our proposed hypothesis, it follows that:

H7: Integrated Support Synergy moderates the impact of Psychological Resilience upon Student Mental Well-Being

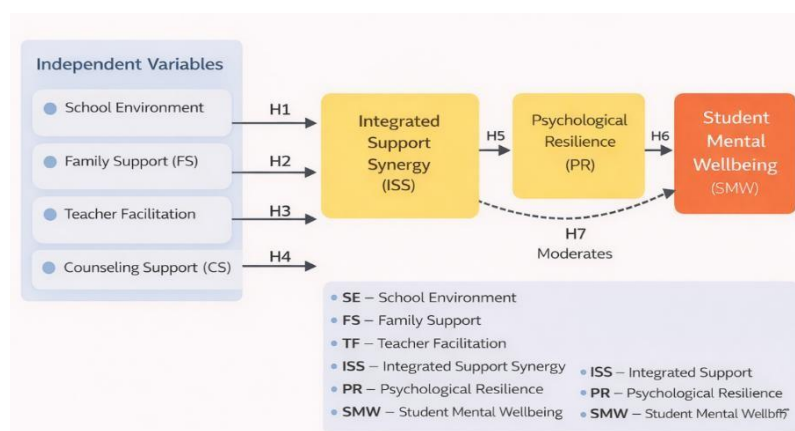


Figure 1 illustrates the conceptual framework of the study. The figure shows the proposed relationships between stakeholder support factors, integrated support synergy, psychological resilience, and student mental well-being.

4. Research Methodology

This section outlines the methodological approach adopted to examine the proposed research framework. It describes the research design, data collection procedures, measurement instrument, and analytical techniques employed in the study.

4.1 Research Design

This study employs quantitative research through a cross-sectional survey to look at the relationship between stakeholder support factors, integrated support synergy, psychological resilience, and student mental well-being. This is the correct way to test relationship theory (Creswell 2014). Structural Equation Modelling (SEM) was used to test the model because SEM can test for multiple simultaneous relationships, including direct, mediating, and moderating (Hair et al. 2019).

4.2 Sample and Data Collection

A structured questionnaire was used to collect data from students through purposive sampling to select responses relevant to the goals of this research (Etikan et al., 2016). The total number of completed surveys received was 463, which exceeds the number required for Structural Equation Modelling (SEM) (Hair et al., 2019).

The process of collecting data was done in an orderly fashion and all included students participated voluntarily and had anonymity with their responses. The data were examined for any missing values, outliers, or non-normal distribution, as suggested by previous research (Tabachnick & Fidell, 2013), before proceeding with analysis.

4.3 Measurement Instrument

Each of the constructs used in this study (school environment, family support, teacher facilitation, counseling support, integrated support synergy, psychological resiliency, and student mental wellbeing) was assessed with a five-point Likert scale, which ranges from 1 (strongly disagree) to 5 (strongly agree). The five-point Likert scale is often used in social science research to measure how people feel about something (for example, an opinion or a perspective). Measurement items for the constructs were adapted from existing literature and adapted to the specific situation of this study (DeVellis 2016).

4.4 Data Analysis Techniques

SPSS and AMOS provided the platform for the analysis of the data utilizing a multi-stage process. EFA was performed first to determine the underlying factor structure and to evaluate sampling adequacy using the approach outlined by Kaiser (1974). Following that Procedure, CFA was performed to confirm the measurement model of the data using Byrne (2016) as a reference. Lastly, SEM was performed to analyze the hypothesized relationships between constructs referenced by Hair et al., (2019). This multi-stage methodology is frequently utilized in social sciences research to evaluate advanced latent variable models.

4.5 Reliability and Validity Analysis

The measurements model's reliability (ability to yield consistent scores across varied sample populations) and validity (ability to accurately measure those constructs) were evaluated using multiple methods.

Reliability was measured using two types of analysis - Cronbach's alpha (internal consistency) and Composite Reliability (CR); generally, Cronbach's alpha scores of 0.70+ are accepted as being reliable (Nunnally & Bernstein, 1994; Hair et al., 2019). Additionally, we used Average Variance Extracted (AVE) to examine the convergent validity of each construct, as values of AVE 0.50+ indicate good convergent validity (Fornell & Larcker, 1981).

To test the discriminant validity of the construct, we used Fornell-Larcker's Criterion and Heterotrait-Monotrait Ratios (HTMR), with HTMR values of 0.85 and below considered to be acceptable (Henseler et al., 2015). In general, the measurement model showed good reliability and validity meaning that the constructs were being measured well.

4.6 Structural Model Assessment

Structural equation modelling (SEM) was used in AMOS to evaluate the fit of the hypothesised models. Model fits were assessed using a variety of fit statistics, including Chi-square divided by degrees of freedom (χ^2/df), Goodness-of-fit Index (GFI), Comparative fit index (CFI), Tucker–Lewis index (TLI), and Root Mean Square Error of Approximation (RMSEA). The recommended values for χ^2/df are generally less than 3, CFI and TLI values greater than 0.90, and RMSEA values should be less than 0.08 (Hu and Bentler, 1999).

The findings resulted in a series of statistical analyses which indicate that the model fits well enough to support the hypotheses postulated by this research. The mediating variables were analysed using bootstrapping techniques, which is a commonly accepted method of analysing indirect paths (Preacher and Hayes, 2008). An interaction term was added into the structural equation model to assess whether a moderation effect exists. Ultimately, the analysis of the structural model provides empirical evidence in support of the hypothesised relationships as presented in the Dynamic Support Interaction Model (DSIM).

5. Measurement Model Assessment

The measurement model was assessed to evaluate the reliability and validity of the constructs prior to structural analysis. In this regard, descriptive statistics were first examined to understand the demographic profile of the respondents.

5.1 Descriptive Statistics of Respondents

According to Table 1, the sample had a reasonably equal distribution of gender, whereby respondents were 53.8% female and 46.2% male. The majority of respondents were represented in the 16-18 year age bracket or 58.5%, with the sample being representative of that population of intermediate students. There were no significant differences between the numbers of first and second year respondents, who were both represented by approximately 49.2% and 50.8% of respondents, respectively. More of the sample were private school students (56.6%) than public school students (43.4%). Most of the respondents indicated their family income was between ₹20,000 and ₹40,000 (38.0%), closely followed by those with an income below ₹20,000 (25.5%). Overall, it appears that the demographic characteristics of this study are fairly diverse within respect to the selected demographic groups.

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	214	46.2
	Female	249	53.8
Age Group	Below 16 years	82	17.7
	16–18 years	271	58.5
	Above 18 years	110	23.8
Level of Study	Intermediate First Year	228	49.2
	Intermediate Second Year	235	50.8
Type of Institution	Public	201	43.4
	Private	262	56.6
Family Income (Monthly)	Below ₹20,000	118	25.5
	₹20,000–₹40,000	176	38.0

	₹40,001–₹60,000	104	22.5
	Above ₹60,000	65	14.0

Note. *N* = 463. Values are presented as frequencies and percentages.

5.2 Exploratory Factor Analysis (EFA)

The suitability of the data for factor analysis was assessed using the Kaiser–Meyer–Olkin (KMO) measure and Bartlett’s Test of Sphericity. The results are presented in **Table 2**.

Test	Value
Kaiser–Meyer–Olkin (KMO) Measure	0.880
Bartlett’s Test Approx. Chi-Square	12004.944
Degrees of Freedom (df)	595
Significance (p-value)	0.000

The data presented in Table 2 demonstrate that the data set is well-suited for use with exploratory factor analysis (EFA). The KMO value of 0.880 is well above the minimum recommended cutoff value of 0.60 (Kaiser, 1974) indicating that the sampling adequacy of the data was excellent. This means that the sample size is sufficient and that the variables (the observed variables) share sufficient variance to be extracted as a factor during EFA. In addition, there was significant evidence from Bartlett's test for sphericity ($\chi^2 = 12004.944$, *df* = 595, *p* < 0.001) that the correlation matrix is not an identity matrix and that there is sufficient evidence of a relationship between the observed variables (Bartlett, 1954). Therefore, EFA was appropriate for this data set to identify what underlying factors make up these constructs.

Item	Component							Extraction
	1	2	3	4	5	6	7	
ISS_1	0.900							0.754
ISS_2	0.889							0.778
ISS_4	0.884							0.801
ISS_3	0.880							0.783
ISS_5	0.874							0.808
SE5		0.898						0.748
SE3		0.892						0.762
SE4		0.881						0.791
SE2		0.876						0.777
SE1		0.865						0.768
CS4			0.892					0.763
CS5			0.879					0.746

CS3			0.878					0.703
CS2			0.874					0.796
CS1			0.874					0.715
SMW1				0.888				0.771
SMW4				0.877				0.765
SMW5				0.876				0.779
SMW3				0.874				0.8
SMW2				0.873				0.777
FS3					0.887			0.763
FS4					0.879			0.762
FS5					0.873			0.784
FS2					0.868			0.735
FS1					0.863			0.765
PR3						0.885		0.794
PR1						0.872		0.766
PR5						0.87		0.766
PR2						0.869		0.771
PR4						0.855		0.77
TF4							0.889	0.813
TF1							0.871	0.796
TF2							0.862	0.776
TF5							0.840	0.787
TF3							0.836	0.772
% of Variance	11.252	11.219	11.11	11.09	10.974	10.886	10.629	
Cumulative %	11.252	22.471	33.582	44.672	55.646	66.532	77.161	
Extraction Method: Principal Component Analysis.								
Rotation Method: Varimax with Kaiser Normalization.								
a. Rotation converged in 5 iterations.								

Table 3 shows all items loaded satisfactorily on their factors (loading > 0.70), and there were only small numbers of items that cross-loaded onto other factors, demonstrating that the factor structure was clearly defined and had a good fit with the data (Hair et al., 2019). The constructs ISS, SE, CS, SMW, FS PR, and TF were shown to cluster into clearly identifiable groupings, further supporting their one-dimensionality.

The estimated communalities ranged from 0.703 to 0.813, indicating a large amount of variance was accounted for by the extracted factor structure. The seven-factor structure accounted for 77.161% of the total variance, which is above the acceptable level for social science research (Tabachnick & Fidell 2013). Also, the amount of variance each of the constructs explained relative to the total variance was sufficient to meet the minimum criteria of 5%, which indicates acceptable levels of construct validity of each construct (Hair et al., 2019). In summary, the study findings established construct validity, supporting further validation through CFA.

5.3 Confirmatory Factor Analysis (CFA)

The Confirmatory Factor Analysis (CFA) measurement model for Information Security Solutions (ISS), Supplier Evaluation (SE), Customer Satisfaction (CS), Software Maintenance Work (SMW), Financial Security (FS), Privacy (PR), and Trust Factor (TF) is represented in Figure 1. The data indicate that the results of the CFA show that the remaining items have very high correlation with the various constructs, with standardised loadings of greater than 0.70, which demonstrates good convergent validity.

As the model was being refined, three items (CS1, TF3, and ISS5) were eliminated from consideration due to their low factor loading values; this led to a more parsimonious and well-fitting measurement model. Overall, Figure 1 indicates that the remaining indicators provide reasonable support for the accuracy of the measurement model for use in structural analysis to follow.

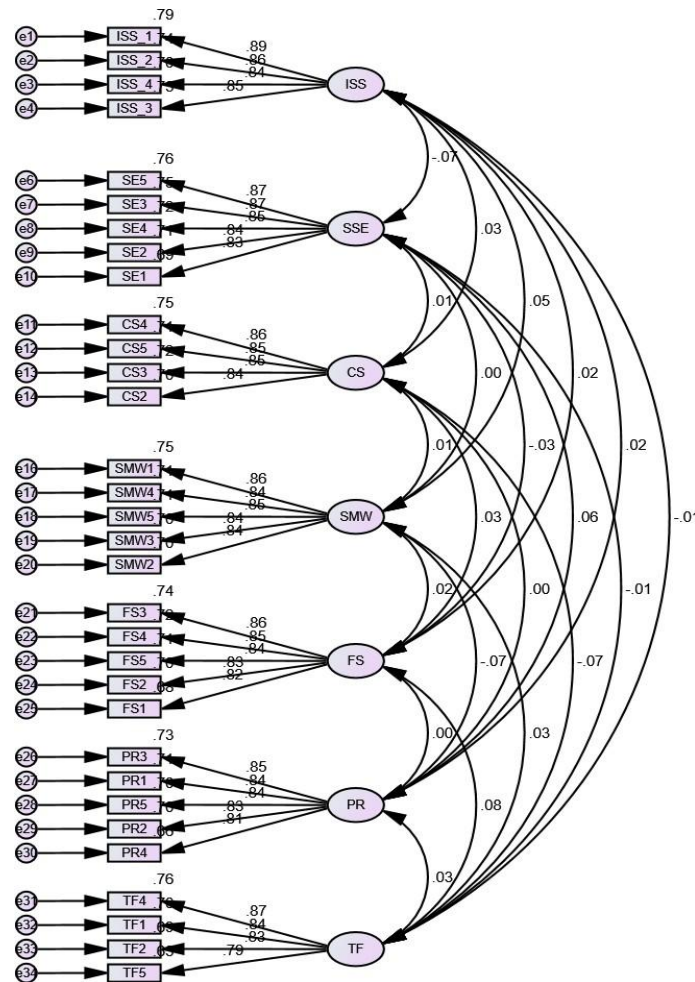


Figure 1 . Confirmatory Factor Analysis (CFA) Measurement Model

5.4 Reliability and Validity

The reliability and validity of the measurement model were assessed using Cronbach’s alpha, Composite Reliability (CR), Average Variance Extracted (AVE), and discriminant validity measures. The results are presented in Table 4.

Construct	Cronbach’s Alpha	CR	AVE	MSV	MaxR(H)
Integrated Support Synergy (ISS)	0.919	0.919	0.739	0.005	0.921
School Environment (SE)	0.930	0.930	0.728	0.005	0.931
Counseling Support (CS)	0.912	0.912	0.722	0.004	0.912
Student Mental Well-being (SMW)	0.926	0.926	0.715	0.005	0.927
Family Support (FS)	0.924	0.924	0.708	0.007	0.924
Psychological Resilience (PR)	0.921	0.921	0.699	0.005	0.921
Teacher Facilitation (TF)	0.900	0.900	0.693	0.007	0.903

Table 4 provides evidence that each of the constructs has a high degree of internal consistency based on Cronbach’s Alpha scores, ranging from 0.900 to 0.930. This exceeds the minimum threshold of 0.70, indicating good reliability of the measurement items through consistent performance across constructs (as stated by Hair et al., 2019). The Composite Reliability (CR) score for each construct also exceeds 0.90; therefore, each of these constructs meets the minimum criterion for determining assessment through converging evidence (i.e., they provide good converging evidence that these predictors correlate positively with each other).

Concerning converging evidence, all CR scores exceed 0.90; hence, there is sufficient evidence that these constructs explain a significant amount of variability in their measurements. The average variance explained (AVE) for each of these constructs is also greater than the minimum criterion of 0.50, providing evidence of converging validity.

With respect to discriminant validity, the maximum shared variance (MSV) associated with each of these constructs is less than the corresponding AVE, while the square root of the AVE is greater than the average correlation coefficients among the constructs. Thus, these findings collectively provide compelling evidence that these constructs are distinctly different from one another and, therefore, suitable for subsequent analysis of the structural model embodiment.

5.5 Discriminant Validity

Discriminant validity was assessed using the Fornell–Larcker criterion, and the results are presented in Table 5.

Construct	PR	ISS	SE	CS	SMW	FS	TF
PR	0.836						
ISS	0.020	0.860					
SE	0.062	-0.071	0.853				
CS	0.004	0.033	0.014	0.850			
SMW	-0.068	0.045	0.004	0.013	0.846		

FS	0.005	0.016	-0.034	0.027	0.015	0.841	
TF	0.033	-0.015	-0.007	-0.067	0.026	0.082	0.832

Note. Diagonal values represent the square root of AVE.

As indicated in Table 5, the square root of the average variance extracted from every construct was larger than its inter-construct correlation value. Thus, it appears that each of these constructs is more closely related to its own indicators than to the remaining constructs within the model. Additionally, all of the construct-to-construct correlation values remain low. Consequently, it is evident from the data that the constructs created here capture distinct and separate conceptual domains. Overall, these findings provide evidence that discriminant validity has been satisfactorily established for the measurement model. Thus, the measurement model will serve as the basis for later structural analysis.

5.6 Model Fit indices

The overall fit of the measurement model was assessed using multiple goodness-of-fit indices, and the results are presented in **Table 6**.

Fit Index Category	Fit Index	Score	Recommended Cut-off Value
Absolute Fit Indices	χ^2/df	1.018	≤ 3
	GFI	0.942	$\geq 0.90; \geq 0.80$
	RMR	0.022	$\leq 0.08; \leq 0.10$
	Standardized RMR	0.0259	$\leq 0.08; \leq 0.10$
Comparative Fit Indices	NFI	0.959	≥ 0.90
	IFI	0.999	≥ 0.90
	TLI	0.999	≥ 0.90
	CFI	0.999	≥ 0.90
Parsimonious Fit Indices	AGFI	0.931	$\geq 0.90; \geq 0.80$
	PGFI	0.791	The higher, the better
RMSEA Fit Indices	RMSEA	0.006	$\leq 0.08; \leq 0.10$

Table 6 shows that this model fits the data very well. Almost all of the chi-square to degrees of freedom ratios ($\chi^2/df = 1.018$) are below the recommended level of 3; thus, this indicates a good overall fit of the model. The absolute fit indices also indicate that the model provides an acceptable fit. Specifically, the GFI (0.942), RMR (0.022), and Standardized RMR (0.0259) values meet the recommended guidelines for absolute fit indices; thus, they indicate that the model can reproduce the observed covariance matrix reasonably well.

Comparative fit indices also confirm that this measurement model fits the data well; as the NFI (0.959), IFI (0.999), TLI (0.999), and CFI (0.999) indices are all above the recommended cut-off value of 0.90. The indices provide more evidence of a very good fit of the proposed measurement model. In addition, the Parsimonious Fit Indices also provide support for the adequacy of this model; the AGFI (0.931) is above the recommended threshold, and the PGFI (0.791) meets the criteria for an acceptable level. Furthermore, the RMSEA (0.006) is well below the recommended upper limit, indicating that the proximity of this measurement model is adequate. Together, this information suggests that this measurement model has a satisfactory Goodness-of-fit and will be suitable for the subsequent structure analysis.

5.7 Standardized Factor Loadings

After performing Confirmatory Factor Analysis (CFA), a table containing standardized factor loadings (Table 7) was generated to provide an overview of how reliable each individual indicator was. Findings presented in Table 7 demonstrate that every item included in our final model showed strong loading onto the respective construct; each item loaded between 0.791 to 0.890. As these loading results exceed the acceptable cut-off of 0.70, we can conclude that the observed variables can reliably indicate the underlying latent constructs represented by our measurement model. Furthermore, all retained items are statistically significant ($p < 0.001$); i.e., they are meaningful indicators of ISS, SE, CS, SMW, FS, PR, and TF. Taken collectively, this supports the conclusion drawn regarding acceptable reliability of the measurement model's indicators and provides validity for conducting follow-up structural analyses of the retained items. This section has utilized the Academic Phrasebank as a guide for reporting quantitative results in tabular format and the interpretation of statistical significance.

Construct	Item	Standardized Loading	S.E.	C.R.	p-value
ISS	ISS1	0.890			
	ISS2	0.857	0.038	24.885	***
	ISS4	0.839	0.040	23.942	***
	ISS3	0.852	0.039	24.597	***
SE	SE5	0.872			
	SE3	0.869	0.040	25.215	***
	SE4	0.850	0.040	24.196	***
	SE2	0.844	0.041	23.882	***
	SE1	0.829	0.041	23.129	***
CS	CS4	0.864			
	CS5	0.846	0.043	22.814	***
	CS3	0.849	0.044	22.963	***
	CS2	0.839	0.043	22.527	***
SMW	SMW1	0.865			
	SMW4	0.843	0.042	23.351	***

	SMW5	0.845	0.041	23.458	***
	SMW3	0.838	0.041	23.102	***
	SMW2	0.838	0.041	23.121	***
FS	FS3	0.860			
	FS4	0.848	0.042	23.285	***
	FS5	0.840	0.042	22.907	***
	FS2	0.834	0.042	22.616	***
	FS1	0.824	0.042	22.170	***
PR	PR3	0.854			
	PR1	0.840	0.043	22.556	***
	PR5	0.840	0.043	22.541	***
	PR2	0.834	0.043	22.292	***
	PR4	0.813	0.044	21.403	***
TF	TF4	0.870			
	TF1	0.835	0.043	22.118	***
	TF2	0.832	0.041	21.974	***
	TF5	0.791	0.044	20.346	***

Note. $**p < 0.001$. Items CS1, TF3, and ISS5 were removed during CFA due to low factor loadings.

6. Structural Model and Hypothesis Testing

To assess the presumed relationships between latent variables within the framework developed in this research, structural equation modelling (SEM) was utilised. A SEM analysis was conducted to determine the various types of effects occurring under the structural model: direct, indirect, mediational, and moderating effects.

6.1 Structural Equation Modelling

Structural Equation Modelling (SEM) was conducted to examine the hypothesised relationships among the study constructs. The structural model is illustrated in **Figure 2**, and the results are presented in **Table 8**.

Hypothesis	Path	β (Estimate)	S.E.	C.R.	<i>p</i> -value	Decision
H1	SE → ISS	0.234	0.007	13.304	***	Supported
H2	FS → ISS	0.287	0.007	17.933	***	Supported
H3	TF → ISS	0.352	0.014	21.051	***	Supported
H4	CS → ISS	0.443	0.016	24.089	***	Supported

Note. ***p* < 0.001.

As Table 8 indicates, both of the hypothesised paths have been confirmed as statistically significant. It is generally accepted that the positive impact of the school environment ($\beta = 0.234$), family support ($\beta = 0.287$), teacher facilitation ($\beta = 0.352$) and counselling support ($\beta = 0.443$) upon integrated support synergy is substantive.

Counselling support was identified as having the greatest positive influence on integrated support synergy, followed by teacher facilitation, family support and school environment. Therefore, a combined approach to supporting students through coordinated effort from multiple stakeholders has an important impact on the strength of the overall support system available to them, supporting the proposed hypotheses (H1 - H4) as well as confirming that each variable associated with stakeholder support contributes significantly toward the development of integrated support synergy.

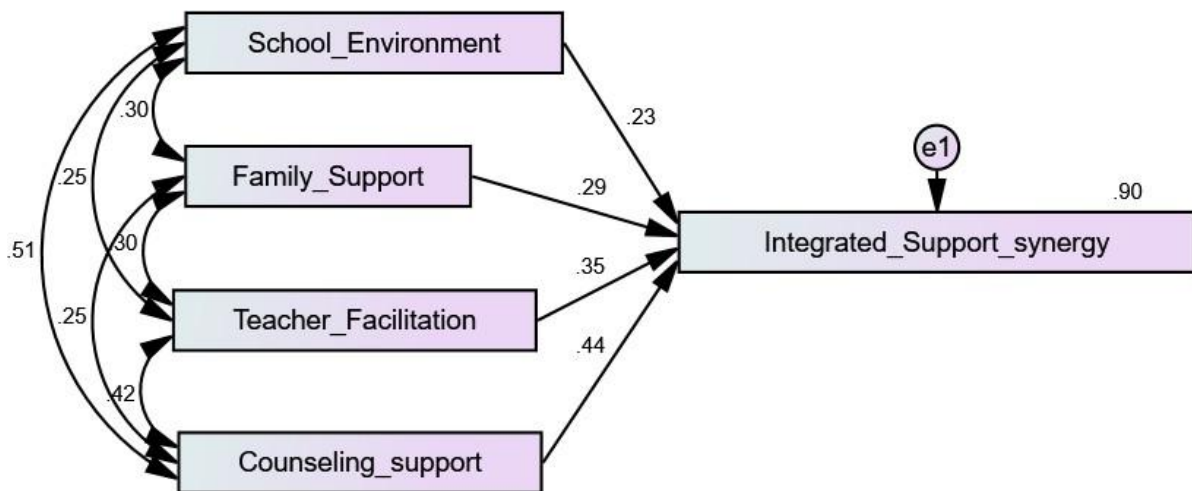


Figure 2 . Structural Equation Model (SEM) Depicting Hypothesized Relationships and Path Coefficients

6.2 Mediation Analysis

Mediation analysis was carried out to assess whether psychological resilience mediates the relationship between integrated support synergy and student mental well-being. The mediation model is illustrated in Figure 3, and the results are presented in Table 9.

Hypothesis	Path	Direct Effect (<i>p</i> -value)	Indirect Effect (<i>p</i> -value)	Total Effect (<i>p</i> -value)	Result
H5	ISS → PR → SMW	0.500 (0.015)	0.302 (0.008)	0.802 (0.004)	Partial Mediation

Note. ISS = Integrated Support Synergy; PR = Psychological Resilience; SMW = Student Mental Well-being.

Table 9 shows that integrated support synergy has both a direct and an indirect effect on student mental health through psychological resilience. The direct and the indirect effects are significant, implying that psychological resilience plays a partial mediating role between integrated support synergy and student mental health.

Specifically, the indirect effect of 0.302 indicates that some of the influence of integrated support synergy on student mental health is transmitted via psychological resilience. Simultaneously, the significant direct effect of 0.500 indicates that integrated support synergy independently impacts student mental health, regardless of the mediator. Therefore, overall, these findings support the idea that psychological resilience is a vital explanatory mechanism connecting integrated support synergy to student mental health. Additionally, the continued emphasis on direct effects supports the idea of partial mediation.

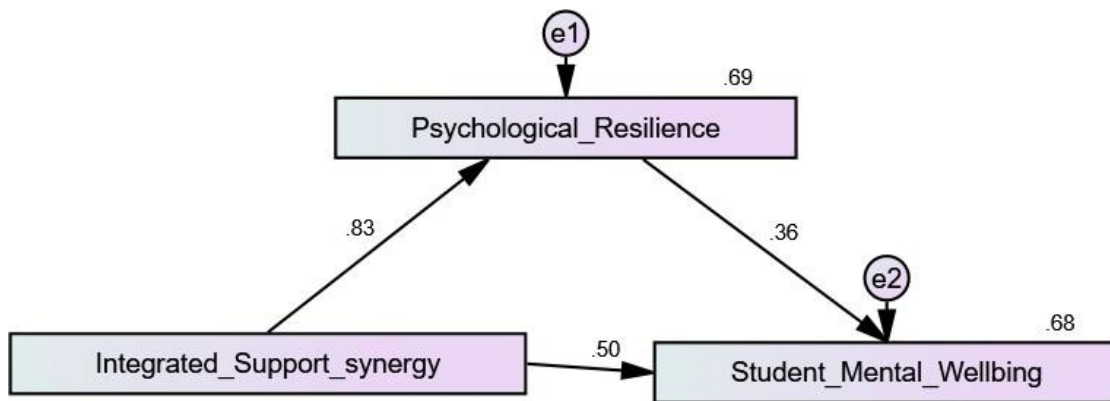


Figure 3 . Mediation Model Illustrating the Role of Psychological Resilience between Integrated Support Synergy and Student Mental Well-being

6.3 Moderation Analysis

The purpose of this section is to describe the moderation analysis carried out to validate if integrated support synergies play a moderating impact on the link between psychological resilience and student mental wellness. The output of this analysis has been illustrated in Figure 4 and the interaction plot is displayed in Figure 5; results of this analysis are listed in Table 10.

Independent Variable	Dependent Variable	β (Estimate)	S.E.	C.R.	p-value
Integrated Support Synergy	Student Mental Well-being	0.563	0.261	3.950	***
Psychological Resilience	Student Mental Well-being	0.457	0.262	2.243	0.025
Interaction (ISS \times PR)	Student Mental Well-being	0.150	0.175	1.468	0.045

Note. ** $p < 0.001$.

According to the findings presented in Table 10, both the Integrated Support Synergy (ISS) score ($\beta = 0.563$) and the Psychological Resiliency (PR) score ($\beta = 0.457$) have positive and statistically significant effects on student mental well-being. Additionally, there is strong statistical evidence that the interaction term (ISS \times PR) is statistically significant ($p < 0.05$). This correlation demonstrates that ISS positively moderates the relationship

between PR and student mental well-being. As can be seen in Figure 5, the slope of the relationship between PR and student mental well-being is higher at higher levels of ISS than at lower levels of ISS.

Overall, these results suggest that the presence of higher levels of integrated support synergies will enhance the positive effect of psychological resilience on student mental well-being.

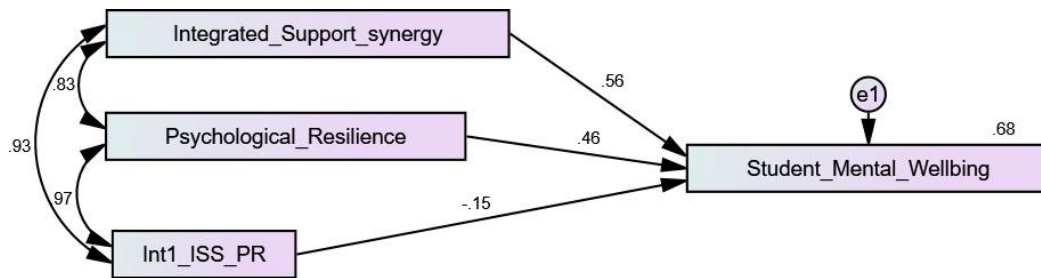


Figure 4. Structural Model Depicting the Moderating Effect of Integrated Support Synergy on the Relationship between Psychological Resilience and Student Mental Well-being

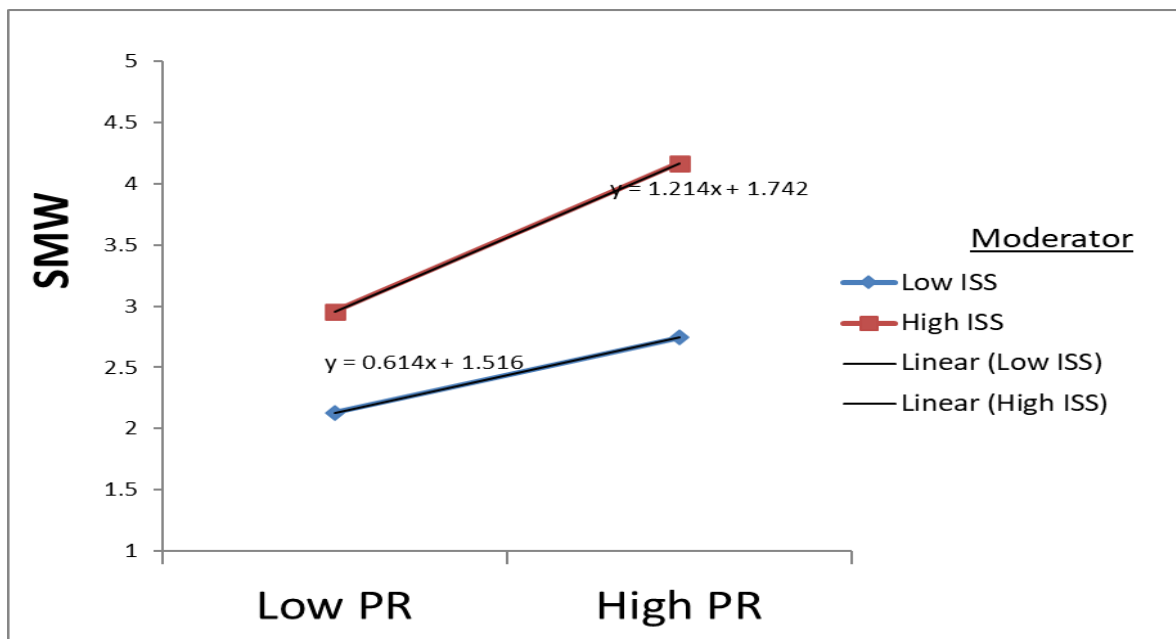


Figure 5 . Interaction Plot Illustrating the Moderating Role of Integrated Support Synergy (Low vs High) on the Relationship between Psychological Resilience and Student Mental Well-being

7. Discussion

According to the results of this study, there is empirical evidence that supports the proposed multi-faceted stakeholder framework of the mental wellness of students, including the school's environment, family support, teacher facilitation, and counseling support as significant areas that will aid in providing integrated Support Synergy, thus promoting the mental well-being of students. The study also identified psychological resilience as an important mediating mechanism through which external support systems can have a positive impact on well-being. In addition, the findings showed that psychological resilience supports students' mental well-being when

there are coordinated support systems between both social and institutional support systems. By examining the interactions of multiple support mechanisms to determine their effect on the mental well-being of students, this research provides new insights into the complexity of how these various support mechanisms interact with one another to have a positive influence on the mental well-being of students.

8. Theoretical Implications

The present research demonstrates an improvement upon past studies by taking into account multiple perspectives within one conceptual model, versus looking at the role of support systems in isolation as done in previous studies. This approach allows for a broader view than previous research has provided.

In addition to broadening the view, this research also provides additional information regarding how student well-being is impacted by the use of integrated support systems through mediation via psychological resilience. The addition of a moderation model demonstrates how the impact of integrated support systems on student mental health varies based on specific conditions, thus further advancing our understanding of how integrated support systems influence student mental health and wellness.

9. Practical Implications

The results from this study will have significant implications for education institutions as well as for policymakers. As such, we recommend that all schools enhance their counselling services to provide better access to counselling support which was found to be the primary predictor of integrated support synergy.

In addition, schools need to encourage and support resilience-building programs; these programs increase a student's ability to cope with and overcome challenges. Encouraging family participation as well as creating a supportive and inclusive school community are equally important strategies. Ultimately, a coordinated, integrated approach to student support will produce positive mental health outcomes for all students.

10. Limitations and Future Research

The study presents several limitations. To begin with, the cross-sectional methodology fails to show the degree of causation, or cause-and-effect. Furthermore, the research is limited geographically and this may impact how well the results can be applied to different geographic areas. Going forward, longitudinal methodologies might be able to capture changes in relationships between the variables over time that were not captured in the current study. Future researchers might also find it useful to examine other moderating variables such as demographic characteristics, socio-economic background, or type of postsecondary institution to develop a more thorough understanding of the influences on the well-being of students.

11. Conclusion

The results of this research indicate that students' mental health and wellness are affected by many interconnected influences, and that psychological resiliency mediates between all types of support systems and improved well-being. Overall, this research indicates the necessity for implementing collaborative and integrated support systems in educational institutions to provide more effective means of promoting student mental health and wellness through a multi-stakeholder approach.

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