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A Predictive Relationship between Academic Resilience and Stress of University Students

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Universities play a critical role in educating students for their successful career. However, in higher educational institutes major focus is given on their academic achievement and psychological factors like academic stress are ignored. The aim of this quantitative study was to investigate predictive relationship between academic resilience and stress of the university students. Convenience sampling technique was used to collect data from 738 northern area university students in Pakistan. Brief Resilience Scale (BRS) having 6 items developed by Smith et al., (2008) was used to measure perceived resilience of university students, freely available on internet for academic research. During data collection respondents were asked to assess themselves on a 6-point Likert scale on both scales. Tools were validated by experts and reliability was established using Cronbach's alpha (0.813). For data analysis, the gathered information was organized and summarized in Excel. Following that, it was analysed using SPSS version 22. To find the effect of perceived resilience stress of the university students regression model was used. Before analysis assumptions of regression model as given by Field (2013) and Laerd (2018) were considered. Findings of this research revealed that perceived resilience scores had a great significant negative effect on stress of university students. The present study highlighted the influence of psychological constructs resilience on reducing stress of university students which ultimately affect their academic performance. In the light of results of current study, it can be recommended that through workshops, seminars, and orientation sessions how university teachers can be motivated to enhance their capacity for teaching and learning using resilience abilities .

Keywords: higher education, academic resilience, academic stress. regression, predictive correlation.

Higher education is now regarded as having a dominant standing and as a necessary investment in the social and economic growth of a nation. Students run into a lot of academic challenges in higher education, which leads to their failure. Riaz et al., (2017) consider that higher

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education is essential for the development of every nation and is regarded as one of the fundamental human rights. Resilience is the key to helping students overcome their academic challenges. Resilience is defined as the ability of a student to cope well with failures, stress, and study pressure. It is often seen as a process of capacity for successful adaptation despite adverse conditions. The ability to overcome challenges to accomplish professional, personal, and academic goals is referred to as resilience (Ahmed, 2006). If an individual can weaken threatening circumstances in life, others are not. Resilient People tackle successfully with difficulties. It can be concluded that capability a person to handle challenges even in future (Masten & Obradovic, 2006).

Academic resilience is the ability of a student to succeed academically despite challenges (Martin, 2013). Academic resilience, described by Fry and Keyes (2010), is the capacity to successfully manage pressure, stress, or setbacks during studies. Tremayne and Curtis (2007) added that variables that affect academic resilience, including self-belief, optimism, purposefulness, direction, adaptability, creativity, challenge, and orientations. The type of resilience related to academics has two components that contribute to the students' adjustment and achievement under threat: the defensive features of the student associated to inner and outside defensive variables (McInerney et al., 2012). Individual qualities and traits (values, beliefs, abilities, and attitudes) that are linked to favourable developmental outcomes are known as internal protective factors. These factors also support positive social, health, and academic outcomes (Bauer et al., 2012).

The study of academic resilience has developed because it is possible to create resilience in at-risk pupils (Luthar et al., 2000). Multidimensional resilience research has been studied in the previous few decades in the domains of psycho-social, and anthropological aspects. Academic resilience is the subject of comparatively rare studies. However, research on academic resilience has grown in significance as a paradigm for examining why some adolescents from similar origins perform better in school than others (Feder et al., 2019).

According to empirical studies, students from low-income or at-risk backgrounds may exhibit resilient traits if they have supportive teachers and a curriculum that encourages active engagement and high expectations (Waxman et al., 2008). According to Resnick et al. (1993), students who have strong bonds with their peers, adults, and society are more likely to lead successful lives. Both environmental conditions and personal traits play a significant protective role (Bloom & Erlandson, 2003). If their school provides a source of external protective factors, such as low academic pressure, attentive and loving teachers, and good student-teacher relationships, students from underprivileged families may have more resilient personalities. According to the mixed methodological study by Waxman et al., (2008), adolescents who formed strong friendships with their mates and elders were with a reduction of probable school. They found that while some students from such homes did not exhibit behavioural issues, most pupils from low-income families tended to be less intelligent and disruptive in class. Veselska et al., (2009) evaluated factors influencing academic resilience in California using academic grades as a criterion for resiliency. It was discovered that opportunities and supportive relationships contribute to increased accomplishment in the resilience construct.

Chronic stress in students increases due to their psychiatric illness. Stress is a crucial factor which is a cause of poor performance of students. Any situation that puts one's capacity for coping at risk qualifies as stressful. There are difficult circumstances involved, which could lead to strain, pressure, anxiety, irritation, and even danger for acquiring an education. Both the body and the intellect of kids are negatively impacted by stress. Students' minds and bodies are

negatively affected psychologically and physiologically by it. Everyone encounters stress on a regular basis, which is a common component. Students from all backgrounds and locations enrol in universities to pursue higher education. They each have unique goals and visions for the future (Caruso et al., 2019). Throughout their school year, students deal with a variety of pressures that affect the entire system. They are anxious about the review procedure and disappointed with the projects. They are unable to handle complicated tasks for a short time.

Cheng and Catling (2015) found negative correlation between resilience and perceived stress as described in resilience. Petrie (2010) and Frigborg et al., (2006) conducted research and observed that stress and resilience are negatively correlated; if the higher the resilience scores were high, the stress was low. This implied that resilience play role to low stress. A good method to improve overall resilience is to develop healthy stress management behaviours (Klatt et al., 2022). These routines could include actions to take in times of stress such as cognitive reconstructing, diaphragmatic breathing exercises, expressive writing, biofeedback techniques, effective communication, problem-solving strategies, and progressive muscle relaxation (Zisopoulou & Varvogli, 2022). They could also include actions that promote overall health, such as getting enough sleep and exercising. Both adults and kids can acquire and perfect these talents with a little practise. They eventually develop the confidence to handle challenging circumstances and the resilience to recover rapidly (Durston, 2022). Consider seeking the assistance of a cognitive therapist if you are having trouble managing your stress levels (Hyland et al., 2022).

In the modern day, investing in higher education is seen as a capital expenditure for our nation. It is of utmost significance for the nation's socioeconomic development. Higher education-accredited institutions are accountable for providing students with a quality education and professional credentials. Highly educated people handle cutting-edge technologies. Higher education is crucial for development because competent labour participation accelerates the economic growth process. Stainton et al., (2019) explained that higher education acts as a launching pad for the nation's socioeconomic and political progress. If we achieve our national goals, we may need to raise the standard of the learning environment.

The idea of resilience as a brand-new area of study in positive psychology is covered in this chapter, along with individual resilience, strategies for enhancing individual resilience, the seven c's of resilience, its types, prior research on academic resilience, the impact of resiliency on students' academic achievement, the role of teachers in honing students' resiliency, and the resiliency model.

Research Questions

The research question of the study was:

What are the effects of perceived academic resilience on stress of the university students?

Method

The goal of the study was to analyse the predictive relation of academic resilience with stress of undergraduate university students in northern areas of Pakistan. In this study, quantitative nonexperimental predictive correlational research design was used. Data were collected from students of three Northern areas universities of Pakistan studying in 7th and 8th semesters using convenience sampling technique. The researcher personally distributed 800 questionnaires to the undergraduate students in final year of public sector universities located at Northern areas of Pakistan while 738 (male 510, female 228) filled questionnaires were received from students of all three universities. The range of majority (84.4%) of students was 21-23 years.

Table 1

Gender wise Sample

	Frequency	Percent	Cumulative Percent
Male	510	69.1	69.1
Female	228	30.9	100.0
Total	738	100.0	

Table 2

Age wise Sample

Age	Frequency	Percent	Cumulative Percent
20-21 years	361	48.9	48.9
22-23 years	265	35.9	84.8
24-25 years	89	12.1	96.9
26-27 years	13	1.8	98.6
28-29 years	10	1.4	100.0
Total	738	100.0	

Results

Data were analyzed to answer the research questions after data collecting through valid and reliable research instrument.

Table 3

Descriptive statistics for Resilience and stress of university students

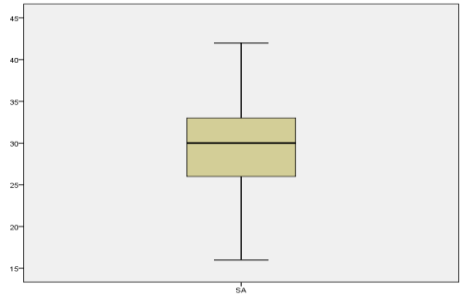
	N	Min	Max	Mean	SD	n (items)
R	717	12.00	35.00	22.85	4.784	7
S	717	3.00	21.00	9.75	3.262	7

Table 1 shows the Resilience scores 12.00 to 35.00, with M = 22.85 and SD = 4.784. Stress scores 3.00 to 21.00, with M = 9.75 and SD = 3.262.

Figure 1

Screening of the data to exclude outliers from students' academic resilience and stress

Academic Resilience



Stress

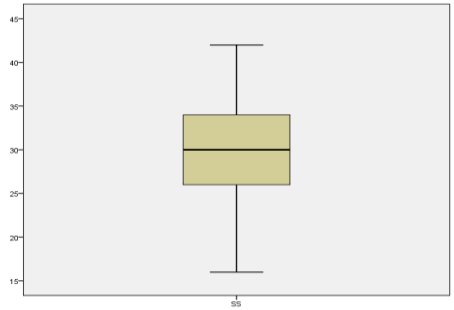
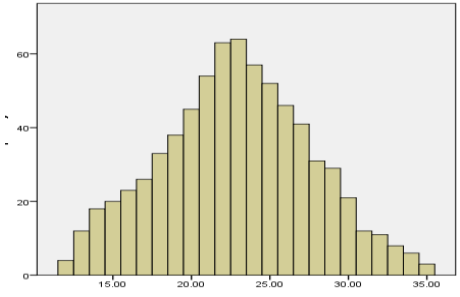


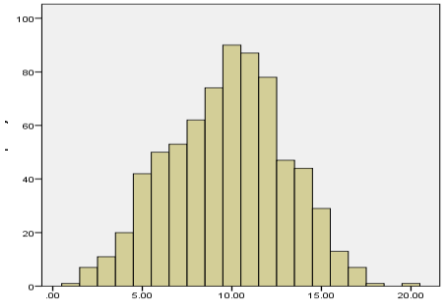
Figure 2

Histograms for Resilience and Stress scores

Academic Resilience



Stress



Assumptions of LRM

Field (2013) and Laerd (2018) has given assumption for using LRM analysis:

Dependent Variable and Independent Variables. The dependent variable should be continuous. The assumption has been followed by adding scores of each item of stress scale so sum of scores for each item of stress scale of university students taken at continuous level.
The independent variable academic resilience should also be at continuous level or at nominal level. This assumption was achieved by taking variable academic resilience as continuous level.

Autocorrelation. The value of Durbin-Watson test was 1.768 (greater than 1.5 and less than 2) which ensured independence of observations, hence no autocorrelation.

Linear Relationship. To find a linear relationship is between independent variable (academic resilience) and stress, scatterplot had been made to verify the linear relationship. This graph established a negative trend between academic resilience and stress of the university students, anxiety, and depression scores appeared (Figures 3).

Figure 3

Relationship between academic resilience and stress

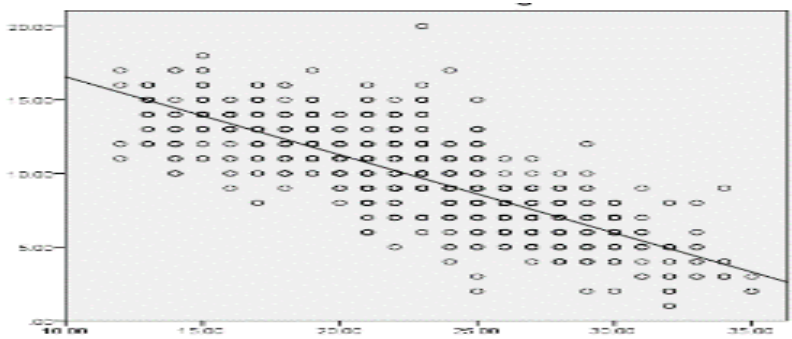


Table 4

Homoscedasticity (resilience and stress)

Model		UC		SC	t	p
		B	Standard Error	Beta		
1	(Constant)	21.868	0.374		58.458	0.000
	Resilience	-0.530	0.016	-0.778	-33.095	0.000

a. Dependent Variable: Stress

Homoscedasticity Test: Glejser Test shows the predictive relationships academic resilience as the independent variable and stress of university students as dependent variable. If the significance value is greater than 0.05 then it makes the data Homoscedastic (Berry & Feldman, 1985; Adams & McGuire, 2018). As value of significance for academic resilience p (0.000), is less than 0.05 so Heteroscedastic.

Table 5
VIF values of academic resilience and stress

	Correlations			Collinearity Statistics	
	Zero-order	Partial	Part	Tolerance	VIF
Resilience	-0.778	-0.778	0.778	1.000	1.000

Multicollinearity. Table 5 shows about absence of multicollinearity which is required for LRM using Variance Inflation Factor (VIF) values. Stevens (2009) described that if the value VIFs is between 1 and 10, means there is a low linear relationship between the independent and dependent variables. VIF value is less than 10 for academic resilience so there is absence of multicollinearity.

Table 6
Academic resilience and stress(Model Summary)

R	R Squared	Adjusted R Squared	SE of the Estimate	Durbin-Watson test
0.778[a]	0.605	0.604	2.072	1.768

a. Predictors: (Constant),

In table 6, the model summary, the predictors academic resilience changed the stress of the university students as R^2 scores were 0.605 (60.5%) determine the change in dependent variable due to independent variables. The model summary explains approximately 60.4% variance with adjusted $R^2 = 0.604$ of predictive variable resilience of university students.

Table 7
ANOVA for academic resilience and stress of students

	SS	Degree of freedom	Mean Square	F	p
Regression	4697.93	1	331.702	38.157	0.000[b]
Residual	7071.11	715	8.693		
Total	7769.05	716			

a. Dependent Variable: S
b. Predictors: (Constant), Resilience

In ANOVA table 7, the independent variable of academic resilience was regressed (4697.93) using LRM on the dependent variable stress for the adequacy of the model. The value of F (38.157), p(0.000) p is less than 0.05 so entire model is significant.

Table 8
Linear relationship (Resilience and Stress)

Model		B	Beta	t	Sig.
1	(Constant)	20.157		24.560	0.000
	Resilience	-0.535	-0.778	-33.072	0.000

a. Dependent Variable: Stress

The linear regressions reported in table 8, the predictor the academic resilience (R) scores, unstandardized coefficients B (-0.535), Beta(-0.778), t(-33.0723) with p(0.000) and

p<0.05 show significant effect of academic resilience (independent variable) as it increases one unit, decrease stress of university students 0.778 units.

Figure 4

Regression standardized residual (Resilience and Stress)

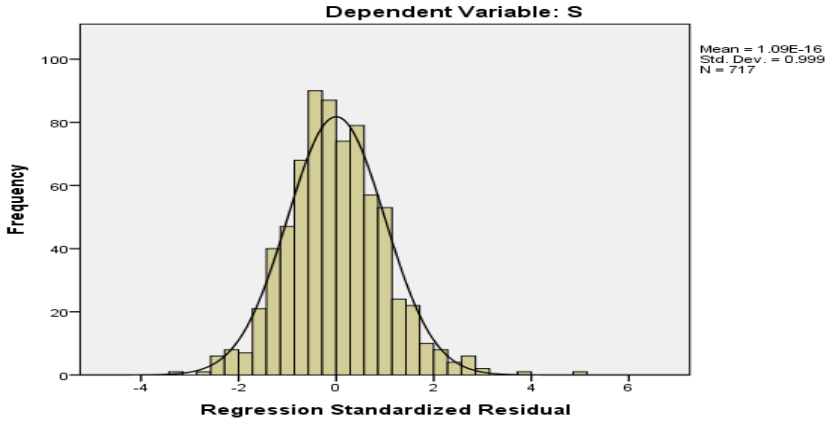


Figure 5

Normal P-P of Regression standardized residual (Resilience and Stress)

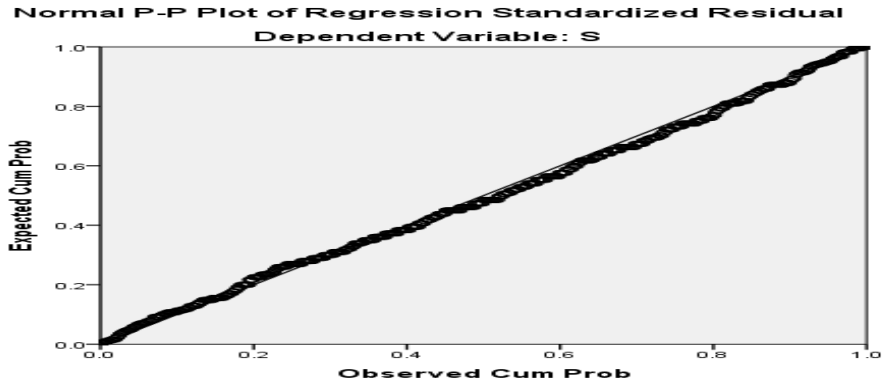
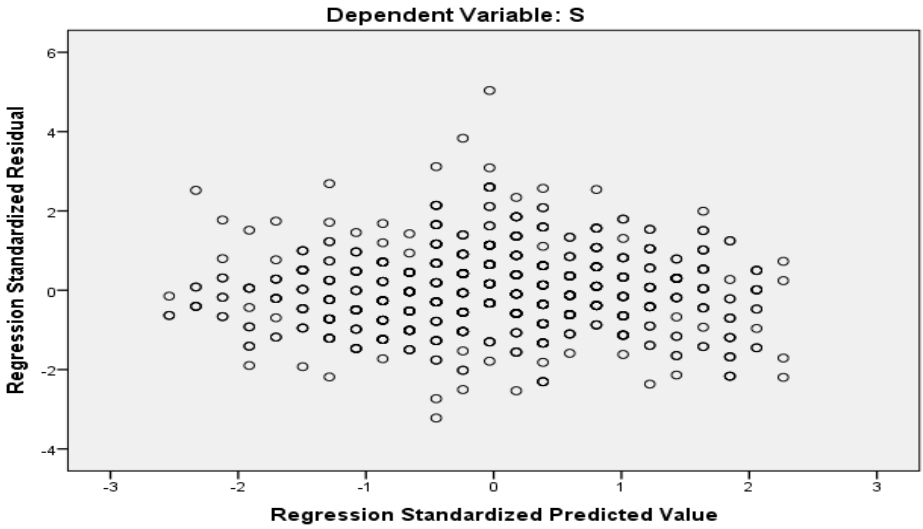


Figure 6

Scatterplot of Regression standardized residual (Resilience and Stress)



Discussion

The purpose of this research study was to explore predictive relationship between independent and dependent variables. First, perceptions of students studying in Northern area universities of Pakistan about their resilience and stress were taken. The researcher also examined the effects of independent variable (resilience) on independent variable (stress). The findings of this research revealed that resilience scores had great significant effects on stress. It is concluded from the findings of this research that perceived resilience scores had a great significant negative effect on stress of university students (Table 2-6). The results of this study show that the scores of resilience have a linear relationship between the outcome of stress and abilities of the university students. The findings of this research revealed that resilience scores had great significant negative effects on stress of university students (psychological problems). Earlier available literature has been aligned with this finding (McGillivray & Pidgeon, 2015; Liu & Boyatzis 2021; Abolghasemi & Taklavi-Varaniyab, 2010; Chen et al., 2009; Cassady et al., 2019; Malik et al., 2020). Researchers like Friborg et al. (2006), Petrie (2010), Solomon (2013) and Pourafzal et al. (2013) also pointed out that there is a negative correlation between perceived stress and had a negative correlation among university students. These results are supported by Tung et al. (2014), where increased resilience was correlated with reduced perceived stress in university students. A study by Ebenezer et al. (2020) and Shilpa and Srimathi (2015) also showed a significant negative relationship between perceived stress and resilience level among university students suggesting that stress and resilience influence one another. When a student's level of perceived stress decreased, hence the level of resilience would increases. The H_1: there were negative effects of perceived resilience on the stress of university students is accepted. The hypothesis (H1) positing negative effects of perceived resilience on the stress of university students is accepted based on the findings. This means that the research data supports the idea that higher levels of perceived resilience are associated with lower levels of stress among university students.

Conclusion

The present study analysed perceived resilience and its effect on psychological problem (Stress) of university students. It is concluded from the findings of this research revealed that perceived resilience scores had a great significant negative effect on stress of university students (4 - 8). As university students studying in fourth year of their study so they are active members of their respective institutions to describe actual situation of their psychological problems such as increasing level of stress which is the main cause of burnout all students. The findings of this research underscore a significant and negative correlation between perceived resilience scores and the stress levels experienced by university students. This substantial effect highlights the crucial role of psychological constructs, particularly resilience, in influencing and mitigating stress among the student population. The established linear relationship between resilience scores and stress further emphasizes the impact of these psychological factors on the overall well-being and abilities of university students.

Recommendations

Although educationists and other responsible stake holders are continuously struggling for improvement of all students in general and university students are particularly. The present study highlighted the influence of psychological construct academic resilience on reducing stress of university students which ultimately affect their academic performance. In the light of literature review and finding of current study it can be recommended that through workshops, seminars, and orientation sessions how university teachers can be motivated to enhance their capacity for teaching and learning using resilience abilities. The finding of current study suggested that learning module should be developed on resilience psychological constructs which have negative significant effect on stress which is most common psychological problem of the university students. Similar research may be conducted to replicate to prove the results of the present study in other universities of Pakistan. The data for future research can be calculated using time series as data collected throughout multiple time of any educational program can give better results in terms of predictive relationship between resilience and stress of students.

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