Adversity Quotient, Perceived Mental Health, And Role Stress of College Teachers

Kavita Kumari[1,*], Rupali Arora[1]
[1]University Business School, Chandigarh University, Mohali, India

*Corresponding author: kavita.saanwalodhia@gmail.com

Abstract. This article aims to develop a fresh approach in resolving job related role stress. It begins by investigating why handling role stress has become such an important research topic and has been achieved by critical analysis of various literature. The focus is on exploring adversity quotient and perceived mental health as measures to reduce stress while performing the role on job. The association between respondents' adversity quotient, which includes qualities (control, origin-ownership, reach, and endurance), and perceived mental health with work role stress are evaluated. Using a sample of 380 respondents and performing data analysis on smart PLS, it is revealed that there is a substantial moderate correlation among the exogenous and endogenous variables with $R^2 = 0.451$. According to the findings of this study, Adversity Quotient, along with perceived mental health, has a significant impact on stress while performing job role. The article contributes by filling a gap in management and organization literature, in which role of adversity quotient and perceived mental health are studied in dearth.

1 Introduction

Role stress on job is described as a negative mental state reflected in anxiety, frustration, pressure, and rage as well as despair [1]. It is seen as an undesirable emotional state. It can also be viewed as an expected reaction to unmet professional demands [2]. This has been recognized as a variable impacting the physical and mental well-being of employees. It was established that stress is an emotional reaction that arises from how workers judge the equilibrium between what is expected in their job duties and the means accessible to meet those expectations. Work-related stress is one of the most prevalent issues college teachers experience and it substantially impacts their capacity to perform their responsibilities effectively. It might affect the efficiency of educators, as it has been linked to absenteeism, turnover rates, low motivation, etc. Furthermore, college teachers experienced higher levels of stress as a result of the additional work during pandemic time period. The move to remote teaching and education, which offered a substantial challenge for mentors and learners, is one of the key factors contributing to college teachers' stress. The instructor's lack of expertise with easily available online learning tools, such as videoconferencing applications, is also cited as a problem. Other than the teaching committee's work, the online transfer policy and the new education policy are other contributors to stress. Work role stress can be reduced by enhancing the external work environment and assigning appropriate tasks and groups to individual workers for improved organisational performance [3]. The adversity quotient plays a critical function by providing the strength to confront such challenges. It is the ability or capacity to solve problems, adversities, and challenges using intelligence and sensible behaviour. Efficacy, achievement, invention, adaptability, and the capacity to support wealth and health are all achieved by the adversity quotient [4][5]. The individual's mental health is characterized by how they feel, perceive and think about themselves and their lives, and this has an impact on how they deal with and handle adversity [6]. There exists perfect link between one's mental health and one's employment since it is believed to have an impact on one's capacity to operate, take advantage of opportunities, and engage fully with family, friends, the workplace, and peers. Additionally, after the COVID-19 epidemic, subsequent adjustments to the educational system made college teachers' jobs more difficult and stressful. It is crucial to do this research as soon as possible because of these variables.

This research article is carried out to examine the work-related stress, AQ, and mental health of teaching staff members in selected institutions in Haryana, India. The previous studies found a link between occupational stress and the adversity quotient [7]; however, according to present study, the Adversity Quotient is not merely associated to this job role stress, despite the fact it reduces role stress. Moreover, in this study, the impact of mental health on job related stress is also explained, along with the adversity quotient. In previous studies, the vice versa relationship was studied, i.e., the effect of role stress on mental health [8][9]. The study is also different from previous studies in terms of data analysis tools. For analysis purposes, Smart PLS4 is also used with higher-order constructs. The study provides insight into the implications of designing interventions or workplace programs that aim to improve employees' resilience, coping skills, and overall mental health in the face of workplace challenges and stress.

2 Literature Review and Research Framework

An unfavourable, challenging, or demanding circumstance that puts psychological or emotional pressure on an individual can lead to stress. Each person has a different set of mental abilities and a different way of seeing and dealing with difficulties. Studies also discovered that a person's AQ level can predict a number of concepts, including resilience, lifespan, performance, and responsiveness to change [10]. The adversity quotient shows the ability to handle various stressors. Hence, there is an association between the adversity quotient and occupational stress [11]. Research on AQ has already been done on various samples and in relation to several constructs, including academic performance or achievement [12] and problem-solving ability [13]. Other constructs include individual demographic factors, job satisfaction [14], and work-family conflict [15]. However, research that connects someone's ability to manage professional stress with their level of adversity is extremely rare. Based on the literature, hypothesis is framed.

H1: There exists a negative relationship between Adversity Quotient and Role Stress.

Conditions associated with stress not only impose a huge burden on particular individuals and their peers; in fact, due to high medical fees and reduced efficiency and productivity, they also impose enormous costs on the economy [16]. Stress disorders are on the rise, and better preventative techniques are desperately needed [17]. It is increasingly important to reduce the harmful effects of stress and boost well-being [18]. In earlier literature, the link between variables was studied as the effect of stress on mental health [19]. From above literature, hypothesis is framed that

H2: There exists a positive relationship between negative Perceived Mental Health and Role Stress.

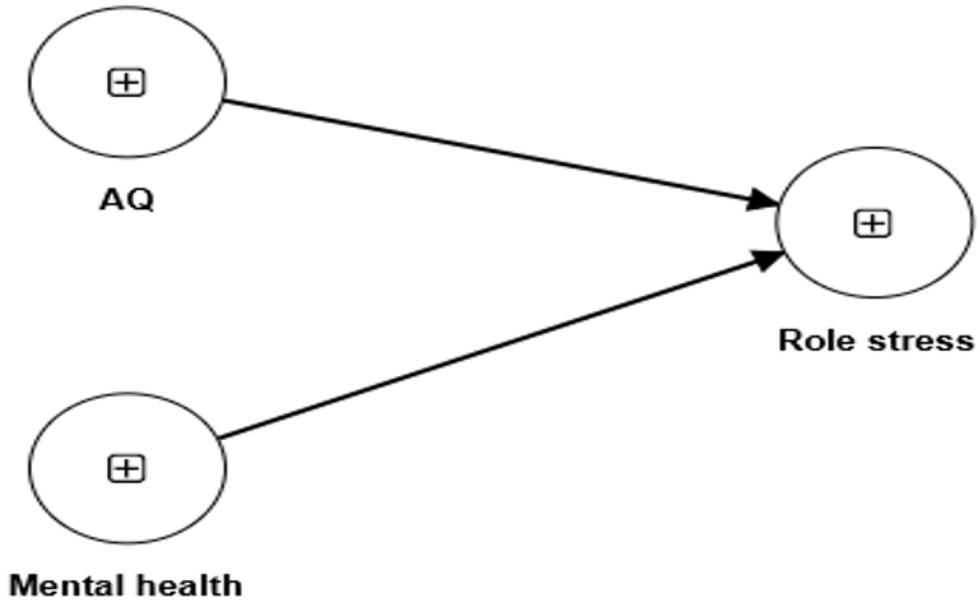

Fig. 1 Research framework

3 Research Methodology

The empirical statistical approach is taken into account. Starting with collecting data, analysis, and presentation, empirical quantitative research focuses on numbers. The research method adopted is quantitative using numbers, starting with data collection, examination, and presentation [20]. In present article, adversity quotient and perceived mental health are the independent variables, whereas role stress is the dependent variable.This research was carried out in five districts: Ambala, Karnal, Panchkula, Gurugram, and Rohtak. The respondents were drawn from the indicated area.

Table 1 Operational definitions of variables

Variables	Sub-Dimensions	Definition	Source of measurement tool
Role Stress	Time stress	The mental state of being under constant pressure to complete the roles	Jamal and Baba's (1992), Melamed et.al,(1991), Xie & Johns (1995) [21] [22][23]
	Anxiety stress	Anxiety connected to one's role	
Adversity Quotient	Control	Self-efforts to correct adverse situations	AQ scale by Stoltz (1997) and Shen and chang (2009) [24] [25]
	Origin-Ownership	Source and responsibility to correct difficult situations	
	Reach	The extent to which other parts of life will affect	
	Endurance	Duration of frustration will last due to troubling situation	
Mental Health	Perceived Mental Health	Perception about the feeling of happiness, calmness, freshness, and interest in life.	WHO (Five) Well-Being Index (1998) [26]

Research instruments

The adversity quotient scale, role stress scale, and mental health scale are employed in this investigation. To measure job related role stress scale elements, a short-version questionnaire was adapted. Time stress and anxiety have been identified as different dimensions by factor analyses of role stress. The adversity quotient scale has been modified to include dimensions (control, origin-ownership, reach, and endurance). The WHO-5 well-being index is a brief, self-administered assessment to rate perceived mental health over the last two weeks. All five positive items of the scale are modified to five negatively phrased items. All scales are assessed on a five-point Likert scale. 50 questionnaires are obtained for the pilot test. The items' dependability was initially examined in the current study. All measurement tools have Cronbach's alphas over 0.7, indicating adequate questionnaire reliability. The evaluation is based on a 5-point scale, with 1 being strongly disagree and 5 being strongly agree.

Sampling unit and size

To determine the sample size of the given study G* Power software is employed.

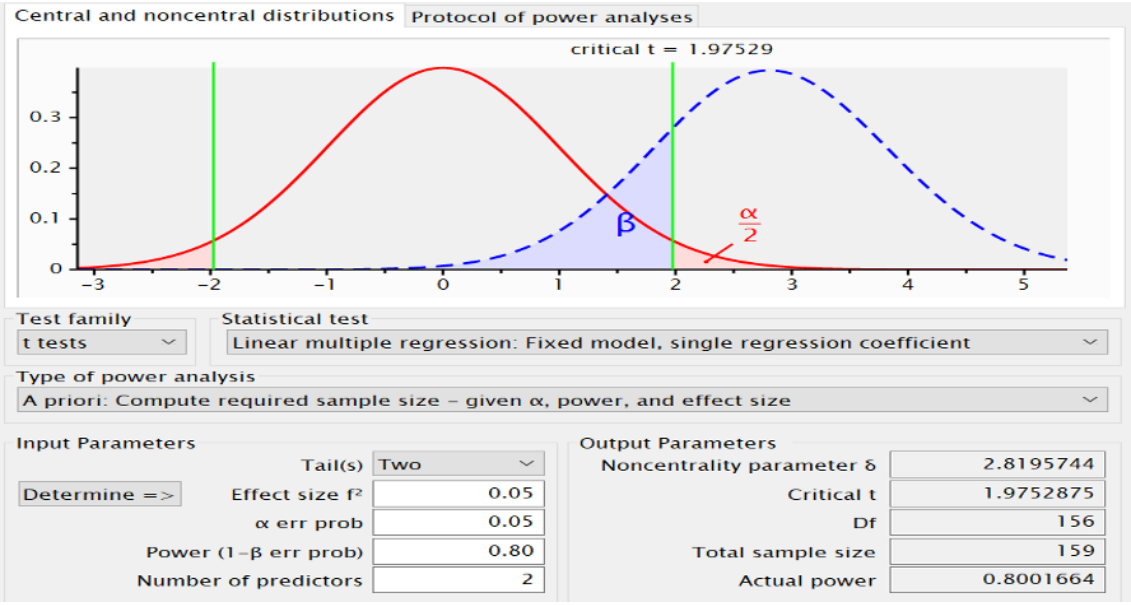

Fig 2 Sample size estimation
Source Author's own findings

The sample for the current study is chosen using a stratified random sampling approach. The subjects of this study are from government colleges and government-aided colleges in the five districts of Haryana, India. There are a total of 177 Government colleges and 99 Government-Aided colleges in Haryana. This research is carried out in five districts: Ambala, Karnal, Panchkula, Gurugram, and Rohtak. The respondents are drawn from the indicated area. The sampling units for the study are Associate professors, Assistant professors, and Extension lecturers of Government and Aided colleges in the five selected districts of Haryana state, India. 411 out of the 500 questionnaires that were issued were filled out, determining the response rate as 82.2%. 31 invalid questionnaires were removed from the sample to eliminate the multivariate outliers; the remaining 380 valid ones were considered for the present study. A priori power analysis in linear multiple regression with effect size f2= 0.05 G* Power software sample size calculation shows 159 as sufficient sample size for analysis of the given study with 2 predictors., but 380 sample size is taken to increase the accuracy and validity of the study.

Data collection method

For data collection, the primary method is used. Primary information is gathered by forming a well-structured questionnaire and circulating it in a Google form from person to person among different employees of different colleges in Haryana state. It is the methodical gathering of data via surveys directly from respondents.

Data analysis method

To attain the objectives of the study, data analysis was performed using PLS-SEM. According to Hair, J.F et al. [27], the fundamental benefit of employing PLS-SEM is that it allows investigators to assess complicated models with multiple constructs, indicator aspects, and structural paths without assuming the data's distributional rulebooks. For analysing a conceptual structure through a prediction standpoint, the PLS-SEM technique is to be used. SEM-PLS is also regarded as beneficial when the path model contains one or more formative, measurable components. Many academics agree that a non-normal data scenario is another reason to utilize PLS-SEM [28].

Data analysis results

The two stages of the PLS-SEM assessment are: a) Measurement model evaluation b) Structural model evaluation

To analyze the PLS-SEM results, it is necessary to first look at the measurement models, which are different for reflective and formative components. The structural model must next be evaluated by researchers when the measurement models meet the requirements.

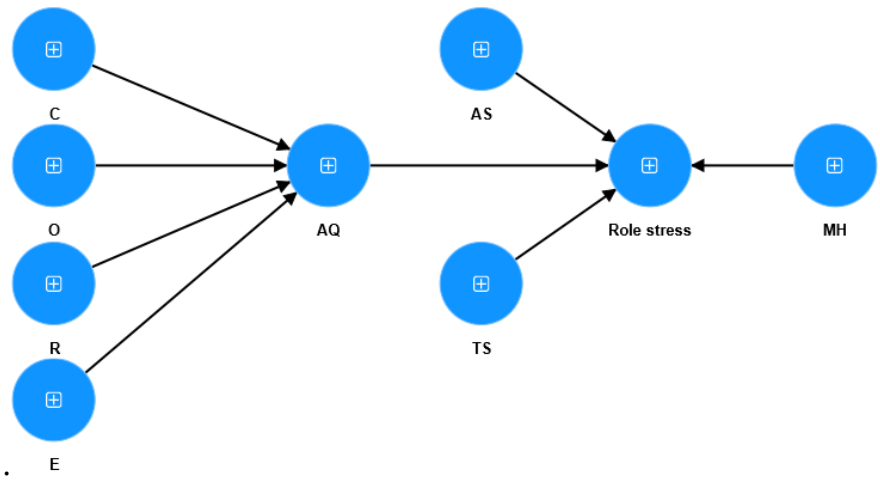

Fig. 3 Second-order structural model for the aforementioned theory
Note: AS- Anxiety, TS- Time stress, C- control, O- Origin-Ownership, R- Reach, Endu- Endurance, MH- Mental health

The higher model in Figure 4 represents AQ as a higher-order construct having sub constructs i.e. control, origin-ownership, reach, and endurance. Role stress is another higher-order construct with lower-order dimensions, namely anxiety and time Stress. The nine-item occupational stress scale has a 0.82 reliability rating. Time stress and anxiety are its two separate aspects, so a higher-order construct, i.e., role stress, is taken as a formative construct. Before considering the structural model for higher-order constructs, the higher-order model must also be assessed for the measurement model as well.

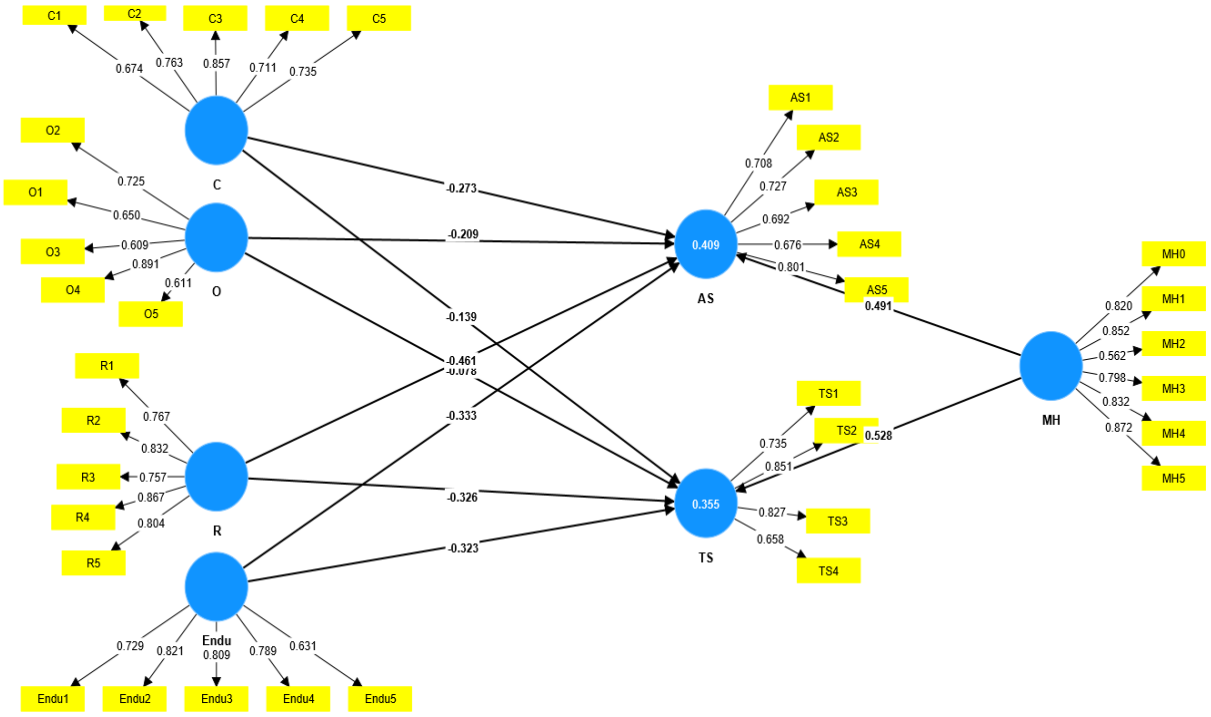

Fig. 4 Measurement evaluation of lower-order constructs
Source: Author's findings using the PLS algorithm

Table 2: Reliability and validity of the lower-order constructs in the model

Sub-constucts	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
AS	0.77	0.778	0.845	0.522
C	0.814	0.822	0.865	0.563
Endu	0.818	0.841	0.871	0.576
MH	0.881	0.906	0.911	0.634
O	0.796	0.962	0.829	0.501
R	0.865	0.875	0.903	0.650
TS	0.773	0.78	0.854	0.596

Source: Author's own findings using Smart PLS4

The measurement characteristics in the lower measurement model are computed using the multi-item constructs in the proposed framework. The Cronbach's alpha is more than 0.7 for each of the constructs, demonstrating the measure's reliability. This shows that all the research constructs used have strong internal consistency. The average variance extracted (AVE) is found to verify convergence validity. The composite reliability values in Table No. 2 demonstrate the extremely high levels of internal consistency and dependability of the study's constructs. The AVE values are higher than the lowest threshold value of 0.5, proving the validity and convergence of all the constructs [29].

Discriminant validity

To determine discriminant validity HTMT is considered a good measure.

Table 3 Heterotrait-monotrait ratio (HTMT)

Sub-constructs	AS	C	Endu	MH	O	R	TS
AS							
C	0.306						
Endu	0.402	0.287					
MH	0.582	0.127	0.232				
O	0.205	0.629	0.179	0.134			
R	0.549	0.374	0.5	0.227	0.338		
TS	0.839	0.188	0.36	0.609	0.187	0.367	

Source: Author's own findings using Smart PLS4

HTMT values near to 1 show a lack of discriminant validity. According to a closer look at the table 3, it may be inferred that the reflective model of our study obtained discriminant validity because all conditions for assessing discriminant validity were satisfied.
It is clear from above criterions (Reliability, validity of the lower-order constructs, discriminant validity and loadings of indicators) that lower order measurement model is meeting all the requirements, so the following step is to assess the higher-order model.

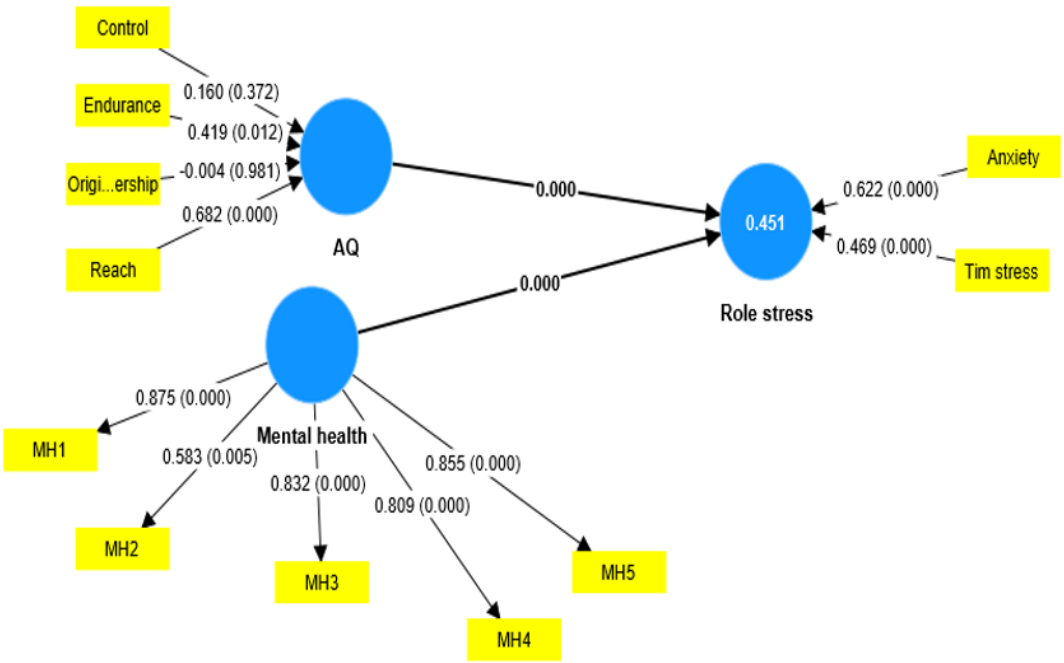

Fig. 5 Higher order model

Higher order measurement model evaluation
In the higher-order measurement model, for formative constructs VIF, the significance and relevance of the indicator weights is to be assessed. Outer VIF and significance of outer weights are represented in Table 4 and Table 5 respectively.

Table 4 Outer VIF (variance inflation factor)

Outer constructs	VIF
Anxiety	1.831

Control	1.422
Endurance	1.23
Origin- ownership	1.387
Reach	1.333
Time stress	1.831

Source: Author's own findings using Smart PLS4

The variance inflation factor (VIF) is frequently used to assess if the formative variables are collinear. The degree of overlap is higher when VIF values are higher. VIF scores of 5 or greater suggest problems with the predictor variables' collinearity. The VIF values should ideally be in the range of 3 and less.

Table 5 Significance of outer weights and loadings

Constructs	**Outer weights**	**P values**	**Outer loadings**	**P values**
Anxiety -> Role stress	0.622	0	0.938	0
Control -> AQ	0.16	0.372	0.483	0.001
Endurance -> AQ	0.419	0.012	0.737	0
Origin- ownership -> AQ	-0.004	0.981	0.343	0.015
Reach -> AQ	0.682	0	0.903	0
Time stress -> Role stress	0.469	0	0.888	0

Source: Author's own findings using bootstrapping in Smart PLS4

Outer weights for all indicators are significant except control and origin-ownership, but these are still kept as their outer loadings are significant. Indicators must be removed if their outer weights are also not significant.

Higher-order structural model analysis

As the measurement model for lower order as well as higher order is satisfactory, in the next step structural evaluation is to be performed using inner VIF, coefficient of determination (R2), Q2, and the statistical significance and relevance of the path coefficients.

Table 6 Inner VIF (variance inflation factor)

Constructs	**VIF**
AQ -> Role stress	1.049
Perceived Mental health -> Role stress	1.049

Source: Author's own findings using Smart PLS4

After analyzing collinearity, the subsequent step is to look at the R^2 value of the dependent construct i.e. role stress. Higher values of the R^2, which runs from 0 to 1, suggest a stronger explanatory power [30] [31]. In all fields and depending on the circumstance, acceptable R2 values vary. In the present study, the R^2 value is 0.451 which is moderate and acceptable showing strong explanatory power.

Table 7 Explanatory power using R square, F square and Q square

Outcome	**R-square**	**Adjusted R-square**	**Q^2predict**	**Predictors**	**F2**
Role Stress	0.451	0.446	0.389	AQ	0.257
				MH	0.391

Source: Author's own findings using Smart PLS4

Values above 0.02, 0.15, and 0.35 are defined as small, medium, and high f2 effect sizes, respectively. As a general rule, Q^2 values for a certain endogenous component should be larger than zero to show the structural model's predictive power. Q^2 values greater than 0, 0.25, and 0.5, respectively indicates the small, moderate, and big predictive relevance of the PLS-path model. In this study, the Q^2 value is 0.389, meeting the criteria.

The next stage is to evaluate the analytical significance and relevance of the path coefficients once the model's explanatory and predictive powers have been demonstrated. Similar to how the formative indicator weights are interpreted, so are the path coefficients. To determine the relevance of the path coefficients and evaluate their values, which normally vary between -1 and +1, bootstrapping is to be done.

Table 8 Path analysis performing bootstrapping

Constructs	**Original sample (O)**	**Standard deviation (STDEV)**	**T statistics (|O/STDEV|)**	**P values**	**Accept/Reject**
AQ -> Role stress	-0.385	0.06	6.446	**0**	Accepted
Mental health -> Role stress	0.474	0.052	9.071	**0**	Accepted

Source: Author's own findings using bootstrapping in Smart PLS4

Table 8 demonstrates a substantial inverse relationship between AQ and role stress at ($\beta = 0.385$, $t = 6.446 > 1.96$, $p < 0.05$) as the path coefficient is negative. It is also proved that perceived Mental health had a significant association with the Role stress of employees at ($\beta = 0.474$, $t = 9.071 > 1.96$, $p < 0.05$). The relationship between poor mental health and role stress is positive.

4 Managerial implication

The Adversity Quotient and Perceived Mental Health were shown to have a moderate impact on job related role stress in this study. The relevance of AQ is demonstrated by the fact that college teachers with strong AQ characteristics experience less workplace Role stress than those with low AQ characteristics. Therefore, educational institutes may reduce employees' role stress with adversity quotient training, which is a strategy to explicitly improve overall organisational performance. All these findings suggest that time-to-time training programmes should be implemented to increase the adversity quotient level and to achieve a good mental health perception in the participants so that the negative consequences of role stress like turnover, absenteeism, and poor performance can be reduced.

5 Limitations and suggestions for future research

Personal, workplace, and organizational issues all contribute to role stress, in addition to perceived mental health and adversity quotient. This study is unable to analyse all variables due to data collection constraints. It is recommended that future studies include more relevant factors to strengthen the foundation of conclusions, like variations in job related role stress, comparisons in role stress on the basis of college affiliation, self-efficacy, etc. The participant's socioeconomic background, workload, and similar variables may also be taken into account when determining their context. According to this study, professors and lecturers who have greater exposure to poor perceived mental health are more stressed at work. Employees who have a high AQ will experience less work-related stress. Thus, based on mental health and the Adversity Quotient, future scholars might further study other aspects. Future studies may also be conducted using AQ as a mediator or moderator; they may yield more thorough results.

6 Conclusion

The empirical study revealed explicitly that substantial inverse relationship exists between AQ and Role stress of college teachers at $\beta = -0.385$ and p value 0. It is concluded that a person with higher AQ confronts reduced role stress compared to a person with lower AQ. It is also proved that poor perceived mental health had a significant association with the Role stress of college teachers and is positive at $\beta = 0.474$ and p value 0. The R^2 value 0.451 is moderate and acceptable showing strong explanatory power. An employee with poor perceived mental health is likely to feel more anxiety and time stress while performing their roles as compared to a person who perceives good mental health.

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