



Evaluating the Impact of Behavioral Stress on Employee Productivity and Innovation in the Higher Education Sector of Pakistan

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Abstract

This research examines the effect of behavioral stress on employees' performance and innovativeness in the higher education industry of Pakistan. This involves forces put on the employees from personal or organizational factors which place psychological and emotional strains on them. In HEIs, these pressures are further compounded by workload, management pressure and expectations, role clarity and identity confusion, and fast technological changes that characterize the sector that could impact on individual and contextual productivity. The proposed research also follows a mixed-methods approach aimed at identifying the correlation between behavioral stress with productivity and innovation of the employees. Using a questionnaire, quantitative data were obtained from academic as well as administrative staff drawn from different universities in Pakistan regarding their stress level, job performance, and innovation capability. More open-ended interviews were conducted to establish which of these causes of stress impinges on the employees' performance of their creative roles and output. These findings revealed the negative relationship between behavioral stress and averagely poor productivity of the employees since the high levels of stress affected efficiency, job interest, and performance of the employees. Another area, which promotes creativity, open-mindedness and freedom, failed as stressed workers said that they had lower probability to experiment or introduce new ideas. Other organizational characteristics like lack of support from managers, role ambiguity and also scarcity of resources compounded the stress level of the employees and thereby limiting their productivity and innovation. But the employees who had positive leadership styles and good organizational climate experienced less stress and worked better in terms of performance and innovation. Based on the findings of the study, it can be concluded that one of the constructs; behavior stress is a key factor that degrades both, productivity and innovation in higher education sector of Pakistan. To overcome this, institutions should come up with supportive policies that will enhance work life balance, communications and counseling services. Therefore, by dealing with stress organizers and self-organizers, higher education institutions can create the best working environment that will be healthy, innovative and productive.

Keywords: Behavioral stress, employee productivity, innovation, higher education institutions, Pakistan, stress management, organizational culture, academic staff, administrative staff, work-life balance

1. Introduction

Higher learning institutions in the present complex and emerging world require high level of performance, creativity, and responsiveness. Though these demands exert a positive influence on the enhancement of services and outputs of institutions, burden on employees, both academic and administrative is unprecedented. One of the significant drivers of workplace stress that has emerged in the last years encompasses behavioral stress which refers to psychological and emotional pressures which can stem from worker and organizational factors. In Pakistani higher education sector this stress can be attributed to various factors such as high work load, unrealistic performance demands, lack of structural support and now because of rapid growth in technology.

Voluntary contributions include work efficiency and creativity as defining factors of organizational performance with a focus on HEIs where production of knowledge and its dissemination is core. Nevertheless, stress may reduce the ability of employees to pay attention, partake and innovate to their optimum. According to research, such stress does not only lower productivity but also hampers creativity, therefore most employees cannot even think out of the box or even come up with new products or suggestions (Kinman & Wray, 2018). Since innovation is important in the today's HEIs for the excellence of academia and administration, it becomes imperative to uncover the effects of behavioral stress.

This study will seek to assess the link between behavioral stress, employee's productivity and innovation in the higher education sector of Pakistan. Considering the importance of the sector for the training of future professionals and contributions to research and development, the problems associated with stress have to be resolved in order to achieve the increased performance of institutions. As such this research will employ a quantitative and qualitative to determine the causes and effects of stress on employees in HEIs in relation to their productivity and innovative capacity. The paper also examines the vicarious aspect of the study in regard to stress and adequate support that will enhance productivity and creativity in an organizational setting. This is the purpose of the study: Analyzing the stress-productivity-creativity relationship with intent to offer practical suggestions for employee well-being and improved nurturing environment for innovation in HEIs of Pakistan.

1.1. Contextual Background

Pakistan's higher education is at the crossroads where it has to balance the access and quality issues in a context of globalization. The sector involves a wide variety of institutions, including large research universities, small liberal arts colleges and everything in between and all these institutions have different problems. While the enrollment rates have improved in the recent past, challenges such as inadequate funding, dilapidated facilities and lack of qualified teaching staff remain some of the major setbacks to education. Furthermore, the sector is operating in a knowledge economy that has gone global; the graduates required are those who can think critically, innovate and solve problems with technical knowledge and skills that enable them to adapt to a constantly changing environment (M. R. Ali et al., 2023; Tamim, 2021).

In this context, the health and productivity of the workers in higher learning institutions are critical. This has put a lot of pressure on the faculty members to produce research articles, attract grants, and teach effectively with few resources and some levels of backing. It is important to note that the administrative workforce is as essential in the running of institutions as the teaching staff and yet they are faced with challenges such as work overload, organizational barriers and lack of professional advancement.

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These systemic problems aggregated put the conditions favorable for stress in behavior to take root with negative impacts on the well-being of the individuals and by extension, the performance of the higher education sector (M. Ali et al., 2015; Asghar et al., 2024).

It is not just an academic interest to know how widespread, why, and what are the effects of behavioral stress in the employees of higher education sector in Pakistan but it is a social issue of great importance. Stressed employees are not productive and this can in turn slow down the development of new ideas in teaching and research, compromise the quality of education being delivered and in the long run affect the social and economic growth of the country. This paper therefore seeks to enlighten this all-important issue with a view of helping the authors gain a better understanding of the challenges faced by the higher education personnel in Pakistan and to help develop the right strategies that would improve well-being and productivity and create an environment that will encourage innovation (M. Ali et al., 2015; Tamim, 2021).

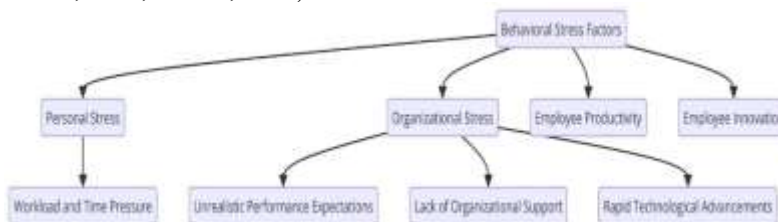


Figure 1: diagram of Behavioral stress factors

1.2. Problem Statement

One of the major problems in almost all fields is behavioral stress which act as an impediment to the higher education sector of Pakistan. The behavioral stress is defined as the pressure, anxiety and emotional exhaustion at workplace which may have several potential causes such as working conditions, employment insecurity, workload, lack of resources, decision making power, and social support. In the context of the Pakistani HEIs these stressors are further saturated with system level factors including bureaucratic obstacles, financial limitations and social pressures (Tamim, 2021).

The effects of behavioral stress as far as the welfare of employees is concerned have been known to cause health complications, low morale, and high turnover rates. But the behavioral stress when left uncontrolled at the individual level can cause major losses in terms of productivity and innovative capacities of the HEIs. In cases when employees suffer from chronic stress, their capability of concentrating, focusing and engaging in problem-solving is affected, and thus work productivity, work quality, and work output suffer (M. R. Ali et al., 2023).

In addition, behavioral stress can retard innovation which is essential in offering solutions to problems that are facing higher learning institutions. Creativity is fostered in conditions where people are encouraged to try out something new, take certain risks and even question the current paradigm. Nevertheless, while employees are stressed, they are not willing to think out of the box, generate new ideas, or consider new strategies. This dampening of creativity can have serious effects including the slowing down of the creation of new teaching methods, hampering of research, and even hinder the sectors' ability to grow in a global environment that is constantly changing (Clements & Kamau, 2018; Mohsin et al., 2022).

1.3. Research Aim and Objectives

The purpose of this paper is to provide a critical analysis of the effects of behavioral stress on employees' performance and creativity in the higher education sector of Pakistan. To achieve this aim, the paper sets forth the following objectives: To achieve this aim, the paper sets forth the following objectives:

- Examine and understand the major sources of stress affecting employees in Pakistani higher learning institutions. This objective entails examining stressors at the personal level such as workload, work-life balance and at organizational level such as resource constraints, leadership styles.
- Investigate the link between behavioral stress and performance of employees in the context of higher learning institutions of Pakistan. To this end, this objective will seek to establish the level of stress and how it is associated with different measures of performance, including research, teaching and administrative performance.
- Examine the role of behavioral stress in innovation within the Pakistani context especially the higher education institutions. This objective will focus on understanding the relationship that exists between stress levels within employees and their ability and willingness to innovate, contribute to new ideas and adapt to change in their line of work.

Thus, by fulfilling these objectives, this paper will be helpful to identify the tendencies in stress, productivity, and innovation in the context of Pakistani HE with the help of potential recommendations for policymakers, university managers, and personnel.

1.4. Significance of the Study

Consequently, this study has practical and theoretical values for stakeholders interested in the improvement of the Pakistan's Higher Education.

1.4.1. Practical Significance

From an applied perspective, this research offers important information for policy makers, university management and staff in higher learning institutions. Thus, by learning the specific stressors that affect employees and the results of the stress on productivity and innovation, specific interventions can be designed. These results may be of use to policymakers when deciding on how to distribute their funds or when designing supportive workplace environments. University administrators can attend to stressing aspects to minimize stressors or even encourage appropriate strategies such as stress management, work-life balance, and communication and support. In conclusion, focusing on the aspect of behavioral stress, the study seeks to help enhance the efficiency, creativity and satisfaction of the individuals involved in the Pakistan's higher learning system.

1.4.2. Theoretical Significance

In theoretical context, this research enhances the existing literature on the topic of workplace stress, its effects on performance and determinants of innovation in organizational environment. Hence, the study is relevant to the context of the Pakistani higher education sector. This paper focuses on analyzing the causes of stress among the personnel of higher learning institutions in relation to individual, institutional and cultural factors. In addition, the study will be useful by exploring the stress, productivity, and innovation linkages in this specific context and by enhancing current theories and frameworks while proposing new paradigms for the management of these dynamics across various cultural and organizational environments.

2. Theoretical Framework

2.1. Behavioral Stress Models

The present research is based on the conceptual models to explain the dynamics of behavioral stress and the effects it has on the performance of employees. Two prominent models provide a foundation for examining this interplay: These are the Job Demands-Resources model and the Transactional Model of Stress (Claes et al., 2023; Naidoo-Chetty & du Plessis, 2021).

According to JD-R model, job strain is explained by the mismatch between the demands placed on employees in the workplace and the ability of the employees to meet those demands. Work characteristics include all aspects of work that involve putting effort that is physical, mental or emotional into the job, effort such as exertions in terms of work volume, time deadline pressure, or emotionally straining interpersonal transactions. Job demands are physical, social or organizational characteristics that make up the work environment and that may pose challenges to the worker to be managed while job resources are the opportunities to meet these demands which may include: . When the demands on the employees exceed the resources, stress is realized and the negative effects can include burnout, low job satisfaction, and reduced performance (Acquadro Maran et al., 2020; Kassandrinou et al., 2023).



Figure 2: diagram of JD.R Model

The Transactional Model of Stress: proposed by Richard Lazarus and Susan Folkman focuses on how the person evaluates the stressors and his or her ways of handling them. This model posits that stress is not a passive process wherein a person is stressed by certain activities or events but an active process where the person manages the situation in one way or the other. According to this model, individuals go through two stages of appraisal when confronted with a potential stressor: The first one is the primary appraisal, where the person evaluates the event as a threat or challenge and the second one is the secondary appraisal where the person evaluates his or her resources and coping mechanisms. It is therefore important to note that this appraisal process decides the level of stress response of the individual as well as the capability of dealing with it (Obbarius et al., 2021; Q. Wang et al., 2021)



Figure 3: diagram of Transactional Model

2.2. Innovation Theories in Education

That is why, acknowledging the fact that people need to be empowered in order to innovate, this work also uses the theories of employee well-being for innovation, with the focus on the phenomenon of psychological safety. Interpersonal vulnerability, also known as psychological safety, was introduced by Amy Edmondson and it is a condition in which the members of a given team are able to freely express themselves with ideas, concerns, and even errors with the knowledge that they will not be penalized for doing so. Psychologically safe environment is when people are open with their creative ideas, ideas

that question the conventional and ideas that can be tested. This sense of safety is important to maintain in organizations, as it allows people to feel comfortable to share ideas and solutions, beyond those they have seen in a similar problem (Y. Wang et al., 2023). In the context of the present study, psychological safety is evident as being critical to fostering educational innovation in higher learning institutions. Impossibility of psychological safety in the academia makes the faculty members more willing to try out new teaching strategies, incorporate current technologies into their educations and participate in research partnerships. In the same manner, the administrative staff who are allowed to speak out their ideas and concerns to the top administration can participate in enhancing better and effective processes, development of better facilities for the students, and other supportive services and environment for every student in the campus. When psychological safety is established within higher education institutions the leaders can unleash the creativity of their employees and set the stage for innovative changes in the sphere of education (Kassandrinou et al., 2023).

2.3. Productivity and Stress Models

This work also examines the theoretical models explaining the complex interplay between stress and performance, especially in the college setting. Herzberg Two Factor Theory otherwise called motivation-hygiene theory is another theoretical perspective that is helpful in enhancing understanding of the way stress affects motivation and therefore performance.

In order to facilitate an analysis of stress and work performance various theoretical models have been created. Performance of the models assists in figuring out how distressing pressure affects worker performance and what components can either offer added stress or decrease it. Below are two widely recognized models that focus on the dynamics of stress and productivity: Yerkes-Dodson Law (Inverted-U Model) Principle and Effort- Reward Imbalance (ERI) Model are the two models that will be discussed in this paper.

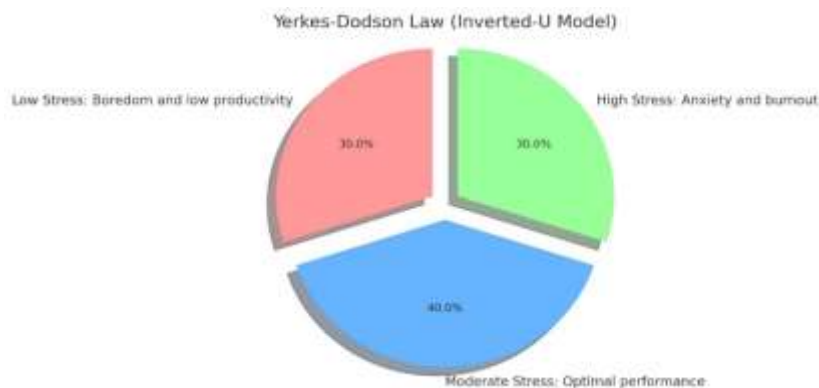


Figure 4: Pie Chart of Yerkes-Dodson law model

2.4. Yerkes-Dodson Law (Inverted-U Model)

The Yerkes-Dodson Law as the Inverted-U Model in turn is used to explain the interconnection of stress (arousal) and performance. This model proposes that there exists an optimal stress which boosts performance. Optimal levels of stress enhance the performance while low stress or high stress is detrimental to it.

2.5. Key Concepts

Optimal Stress Level: Stress at moderate level is good for productivity and performance and this is because stress enhances concentration, energy and motivation.

Low Stress (Underload): If, however, stress levels are low, employees may become bored, disinterested and unmotivated leading to low productivity.

High Stress (Overload): Stress when taken to the extreme is detrimental since it results in anxiety, work burnout, physical/emotional fatigue which results in a downtick in productivity.

Inverted-U Shape: This model is depicted graphically using an inverted ‘U’ whereby the performance is high when stress is moderate, and low when stress is either high or low.



Figure 5: Yerkes-Dodson law model tree

2.6. Implications for Productivity

Basically, high productivity is achieved when an employee is harassed, but not under pressure to a point of straining himself/herself. Mentally and physically, employees should not be overwhelmed by stress so organizations should seek to ensure that the workload is well distributed and that they create friendly working conditions that yield high results.

2.7. Effort-Reward Imbalance (ERI) Model

Effort and reward equity model: This model was developed by Siegrist in 1996 and it is commonly referred to as ERI Model. Effort and reward, equity model- These two refers to the effort that an employee invests in his/her work and the reward he/she receives in return. This model holds that stress results from disparity between effort and reward and this has a negative effect on output.



Figure 6: Pie Chart of Effort Reward Imbalance Model

2.8. Key Concepts

Effort: That is a part of the employee's self that he or she puts into the job as willingness to work extra hours, take up more tasks or challenges.

Reward: The level and type of rewards employees are given for the work they do, mainly the financial rewards, which include; salaries, bonuses and the social rewards which include; recognition, respect, job security among others.

Imbalance: Stress emerges when people in workplace feel that they are working hard and still they are not being compensated adequately. This can cause frustration, demotivation and at the long run low productivity or rather inefficiency in work.

Overcommitment: A stressed employee is an unhappy employee and those who are deeply committed to their job if continuously receive signals that their work is not adequately valued, are likely to be stressed out.

Implications for Productivity:

When effort-reward imbalance happens, stress is more likely to be experienced by the employee hence reduced productivity, job dissatisfaction and health issues.

This paper gives a brief on how organizations can improve productivity by implementing efforts that fairly compensate the employee for their work, appreciate their efforts, foster their growth in the establishment, and provide flexibility to employees regarding their working schedules.



Figure 7: Tree of ERI Model

2.9. Comparison of Models

Whereas Yerkes-Dodson Law mainly concentrates on the general levels of stress and their effects on the performance, the Effort-Reward Imbalance Model provides a deeper insight into the stressful conditions at work place and what may cause or contribute to stress, namely reward ratio. The Yerkes-Dodson Law assists any given manager in recognizing and controlling the stress level which leads to the optimization of the performance. This model has it, that imbalance in organizational practices leads to stress due to overworking and no reward, hence the importance of following the ERI Model.

Conclusion

Each model offers significant information about stress and productivity nonetheless, stress in this model is viewed different. The Yerkes-Dodson Law also illustrates different aspects of stress indicating that it should be moderate and the ERI Model shows how effort-reward ratio should also be fair. Acquaintance with these models may assist organizations in developing effective ways and means of containing stress and improving work productivity.

Herzberg's Two-Factor Theory proposes that job satisfaction and dissatisfaction are influenced by two distinct sets of factors: attributes or factors that can be considered as hygiene factors and motivators. Peculiar hygiene factors include wages, conditions of work, job security and other factors that are anchored on the job context and context of work. Although these factors do not breed

high motivation or satisfaction, their absence breeds dissatisfaction and stress thus reducing productivity. In contrast, the content of motivators is inherent in job characteristics and again are related to achievement, recognition, responsibility, and promotion opportunities. When these factors are present, the employees will be able to enjoy their job, be motivated to work harder, and have better performance at the workplace (Yang & Cai, 2022).

When it comes to the world of higher education, stress might be caused by absence of the hygiene factors such as lack of resources, plenty of bureaucracy or insecurity at the workplace. From the above dissatisfaction, the individuals may be motivated to work less, exert less energy, and hence produce low results. On the other hand, if the higher education institutions are more focused on the motivator factors like; Career progression, acknowledgement of achievements, and self-responsibility and control then employees will in turn flourish hence improving their job satisfaction, motivation and productivity levels (Jiang et al., 2023).

3. Literature Review

3.1. Global Perspective on Stress in Higher Education:

Recent studies point to the fact that behavioral stress affects the personnel of higher education institutions worldwide. The literature review shows that the academic and the administrative staff in universities across the globe are under considerable pressure owing to different factors such as work load, performance pressure, resource constraints, and inadequate work-life balance. This chronic stress has been associated with all types of adverse effects, not only on personal health, but also on organizational performance (Jácome & Chi6n, 2022; Owusu et al., 2024).

Studies have shown that there is great stress in higher education institutions and that it leads to low productivity. Most academics who are stressed may have a low research productivity, low quality teaching or reduced participation in administrative duties. Likewise, the high level of stress of the administrative staff results in lower efficiency, reduced creativity, and poor problem-solving skills. This downtrend in productivity may have wide implications for the general operations and efficiency of higher learning institutions (Jääskeläinen et al., 2020).

Moreover, research has indicated that stress undermines innovation in higher learning institutions. When people are stressed for a long time, they can no longer easily think creatively and generate new approaches to solve problems, think out of the box or adopt new approaches. These constraints may therefore limit the capacity of the higher education institutions to innovate, satisfy emerging social demands, and seek new solutions to prevailing challenges, or sustain their relevance in a growing global market (Bijalwan et al., 2024; Owusu et al., 2024).

3.2. Pakistan-Specific Studies

Although, the research done at the international level is very helpful in laying a foundation, it is equally important to understand the setting and environment of Pakistan's higher education system. A few researches have been conducted to identify the particular stressors of academics and staff in Pakistani universities so as to understand sources of stress in this particular setting. Such studies tend to focus on the role of culture, social pressure, and limited resources on the lives of higher education personnel in Pakistan (M. R. Ali et al., 2023; Tamim, 2021).

A study done on the experiences of the faculty in Pakistani universities shows that the faculty teaches large classes, assumes administrative responsibilities and conducts research with inadequate resources. Also, they may face a pressure to publish their research in international journals, working in a system with bureaucratic barriers, and organizational structure with a high degree of hierarchy. These demands combined with the social pressure and cultural values such as respect to the authority and elderly people can lead to high level of stress among Pakistani academics (Tamim, 2021).

Likewise, administrative staff of Pakistani universities suffer from various bureaucratic hurdles, work under constrained resources and try to cater the needs of increasing number of students. They also may encounter problems concerning job insecurity, promotion, and no availability for growth in their careers. All these factors along with the other socio-economic problems in Pakistan can be a cause of stress and affect the health and efficiency of the administrative human resource (M. R. Ali et al., 2023; Asghar et al., 2024).

3.3. Gaps in the Literature

Although, the existing emerging literature contributes towards the understanding of stress among the higher education personnel in Pakistan, there is a lack of comprehensive understanding of the relationship between stress, productivity and innovation in the given context. In most existing studies stressors are investigated or the effects of stress on well-being are analyzed with very little attention paid to the interdependence of these factors.

In fact, the gap in the literature entails further research on the negative effects of stress and its direct effects on the productivity of the academics and staff in the universities of Pakistan. Although various research work indicate that stress has negative effects on productivity across the world, it is important in this case to look at the effects of stress on productivity in the higher learning institutions of Pakistan. Learning the ways stress is experienced at the workplace, how it affects the different aspects of productivity, such as teaching, research, and administrative work and the moderating or mediating factors, is critical in designing interventions.

In addition, the existing literature examining the hypothetical relationship between stress and innovation in Pakistani higher education context is also limited. Since innovation is central to institution development and competitiveness as well as social relevance, it is pertinent to establish how stress could influence or shape innovative practices among academics and other staff. It is therefore relevant to analyze the conditions that exacerbate or alleviate stress-related barriers to innovation in the higher education system of Pakistan for the improvement of the current academic climate.

4. Conceptualizing Stress, Productivity, and Innovation

4.1. Defining Behavioral Stress

As for the concept of behavioral stress, the present research applies a multi-dimensional concept, thus acknowledging its subjectivity and complexity. In the case of higher education employees, stress may be described as a subjective state of psychological and physiological pressure that results from perceived job demands and pressures influenced by characteristics of the employee and his

work environment. This definition recognizes stress not as a mere impersonal pressure exerted on the person but as the individual's assessment of the demand and his/her ability to deal with it (M. Ali et al., 2015; Jääskeläinen et al., 2020).

Moreover, one has to differentiate between stress types as they may affect work productivity and employees' health in different ways. Chronic stress is usually long-term while acute stress is most often precipitated by specific events or time-bound objectives and can in fact be productive in some environments. However, the stress that is continuous and is not relieved between episodes, burnout, health issues and job dissatisfaction are some of the outcomes of chronic stress. Chronic stress is the major type of stress that has severe impact on the health of individuals as well as organizational performance (M. Ali et al., 2015; Jääskeläinen et al., 2020).

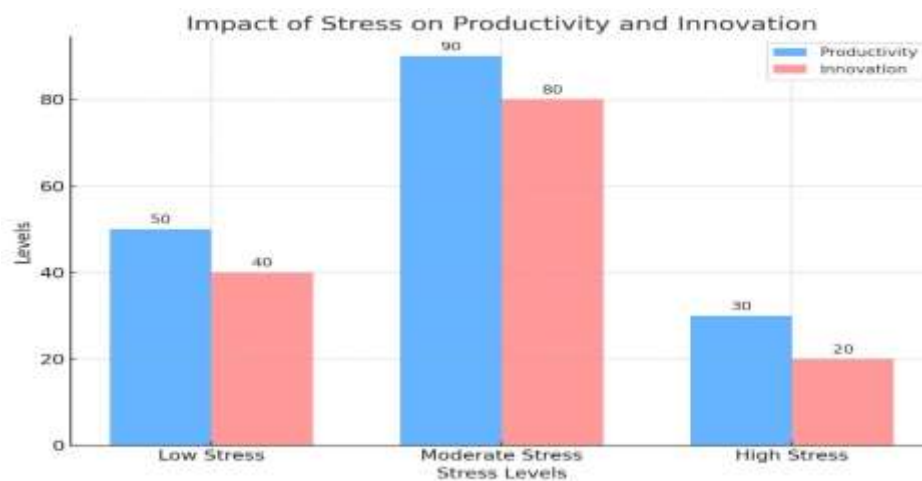


Figure 8: Bar chart of stress level on Productivity and Innovation

In the context of higher education, stress sources may be: workload, performance, resource constrained, insecurity of employment, decision-making powerlessness, and interpersonal conflict. In addition, there are personal factors that can determine the way stress is experienced and dealt with, for instance, personality, coping strategies, perceived self-efficiency. Hence, it is important to examine the relationships between individual and organizational characteristics in order to determine how stress and wellbeing of the employees could be addressed within the context of the higher education institutions (Jácome & Chi6n, 2022; Owusu et al., 2024).

4.2. Linking Stress and Productivity

Stress and productivity are inversely proportional to each other but there are cases where stress levels do not affect the productivity levels. It has been often accepted that high levels of stress result in low levels of performance, however, in some circumstances, stress can act as a performance enhancer. This is known as 'eustress' where people believe that some pressure is actually helpful in encouraging them to work harder (Bijalwan et al., 2024; Yang et al., 2023).

The essence here is to achieve the right level of stress, which is most often represented by an inverted U-shaped curve. If the stress levels are too low the people start getting bored, they lose motivation and their productivity drops. On the other hand, high level of stress may result into stress overload, stress out and a drastic decrease in performance. Stress has an optimal level that is, the level in which an individual feels challenged and works harder to produce best results as compared to when he or she is faced with overwhelming challenges (Rahmani et al., 2021).

But it is necessary to understand that stress responses differ from person to person and are individual. Some of these factors include personality characteristics, ways of handling stress and the type of stressors that are being faced. This means that what might be motivating for one person could be actually very debilitating for another person. Thus, the process of managing stress within the workplace should be client-oriented and personalized as it has been demonstrated that using a 'blanket approach' to the issue will not yield satisfactory results.

4.3. Stress and Innovation

Stress is also a two-edged sword as it acts as a potential source of innovation as well as an inhibitor of the same due to the nature and intensity of stress present. On the one hand, it can be noted that if stress is not too high but is considered by an employee as a challenge rather than a threat, it can contribute to the development of creativity and problem-solving, which can lead to individual innovation. This type of stress can help people to be innovative and search for new strategies to solve problems and persist (Li & Wang, 2021; Zhu et al., 2022).

Still, acute and moderate stress in the main fosters creativity, while chronic or high-stress levels – hamper creativity at the individual and the organizational level. The cognitive resources get over taxed when an individual is stressed for a long period of time and it becomes very difficult to come up with ideas that are completely different from the others. In addition, stress conditions generate risk aversion, lower information processing, and lower propensity to innovate, which is a problem within organizations (Jácome & Chi6n, 2022; Owusu et al., 2024).

In learning institutions, a culture that emphasizes on stress can negatively affect creativity among the faculty and other employees. Professionals in academia may be forced to work more and produce articles instead of focusing on long term creative research projects. Similarly, the stressed administrative staff may be constrained in their ability to change the culture to support new ideas or students' creativity to solve institutional problems. Thus, it is important to support a positive and moderate work environment that would not contribute to chronic stress and would help enhance the culture of innovation in higher education (Tamim, 2021).

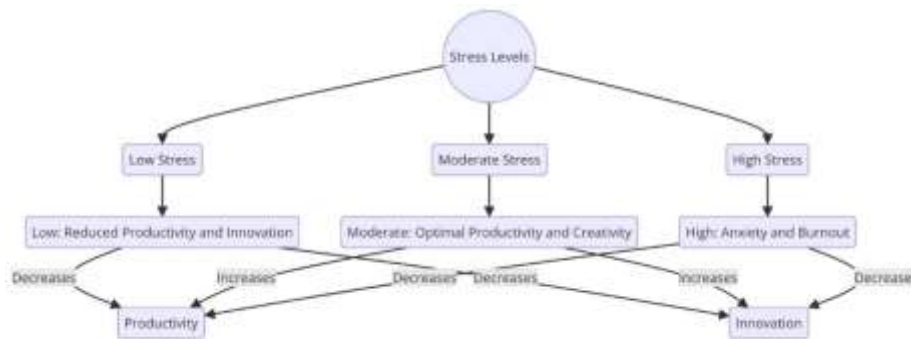


Figure 9: Tree of Stress Levels

5. Discussion

5.1. Implications for Higher Education Institutions

It is evident from this research that behavioral stress in higher learning institutions needs to be handled in order to promote a healthy and efficient working culture. Understanding the complex and comprehensive role of stress as both an independent variable and one that influences and is influenced by other variables on the levels of the individual employee and the organization is necessary to plan and design stress management interventions that would enhance productivity through creativity.

It is suggested that higher education institutions should pay attention to the promotion of a system for stress control that would take into account multiple sources of stress for individuals and organizations. At the individual level, it is possible to make counseling services, stress management workshops and materials on the effective work-life balance available to the employees, thus ensuring that they are able to deal with stress in the most appropriate way. At the organizational level, institutions should ensure they provide organizational work culture and environment that respects the physical, emotional, and social health of the employees, encourages the practice of communication and work-life balance (Abd-El-Salam, 2023).

Moreover, the problem of organizational creativity and innovative activities should not only be solved by reducing the level of stress at work but also by creating the atmosphere that stimulates employees to take risk, to be creative, and to grow professionally. There are certain ways through which institutions can foster innovation; these are by funding research and development, facilitating knowledge exchange, and rewarding innovative activities. Thus, through dealing with such factors of stress and providing the supportive and stimulating working environment, the higher education institutions can enhance the performance of the employees and reach the organizational success and personal successes (Van Heerden et al., 2022).

Association between personal and occupational sources of stress and employees' performance has significant research implications for HEIs in Pakistan. As such, the observation of stress management in the context of the given socio-economic and cultural reality of the country is crucial to sustain, improve and optimize the operations and development of the HEIs. Below are the key implications for Pakistan in light of this study: Below are the key implications for Pakistan in light of this study:

i. Students' poor performance and lack of productivity in terms of research

Universities are a crucial means towards the advancement of innovation, research and education in Pakistan. As observed, whenever stress is high, probably as a result of work overload, unrealistic targets, or inadequate social support, the academic staff's productivity and quality research output capacity reduces. Stressed faculty can be said to be fatigued hence their diminutive participation in teaching and research thus lowered academic standards among the academic institutions. They can have long term detrimental effects on the situation of Pakistan in international academic competitiveness and prospective of the country in knowledge economy sectors.

ii. Reduced Administrative Efficiency

Therefore, the study also highlights that administrative employees also feel pressured because of role stressor, lack of resource, and leadership support. These stressors decrease bureaucracy output affecting the daily activities like students' services, financial management and overall organizational planning. In particular, the presence of stressed employees in Pakistan where bureaucracy Decompiled severely can lead to additional administrative barriers and slow institutional development. Lowering the stress levels by attracting as well as effectively deploying resources and has provided a clear and easy to understand goal and objectives can improve the efficiency of operations which is key to the development of HEI sector in Pakistan.

iii. Organizational climate affects the following factors:

The best opportunity in the higher education institutions of Pakistan is that the turnover rate of the employees is increasing significantly particularly in the academic positions. This is due to general stress; personal stress (work-life stress, psychological stress), organizational stress (constrained support system); hence, low job content satisfaction. This is the reason why most HEIs struggle to retain qualified staff, which in turn impacts negatively on the standards of education as well academic programs offered. Measures that can be put in practice to minimize stress may also have positive impacts on the employees' level of gratification, which in turn increases the employee turnover and institutional stability.

iv. Gender-Specific Challenges

In a context such as Pakistan's where family and cultural expectations of women are more rigidly defined than men women in higher education have specific sources of stress linked to a work-family conflict, pressure to gain employment or families' financial responsibilities and traditional roles and expectations of women. The female college faculty and workers always have multifaceted demands in both their professional and family lives and these conflicts make them more stressed and less effective. It is therefore suggested that the higher education institutions in Pakistan should adopt other gender-sensitive measures as a way of easing the above-stated stressors with a view of increasing women's engagement in academia.

v. Issues in Innovation for Development of Education Reforms

Fear tends to decrease the creativity and innovation, which are necessary to improve the conditions of the higher education in

Pakistan to the global level. According to the present professional state of affairs, as faculty members and administrators, our focuses on so many stressors including, workload, clarification of roles, and more paramount perceived lack of institutional support to enable us to think innovatively and to address educational reforms. This limits the country to develop a coherent policy on how to modernize its education system, integrate new technologies and liberal teaching approaches. Reducing stress levels through better leadership, resources and staff support will facilitate the staff to concentrate on their tasks for leading the educational reform in Pakistan.

vi. Mental Health and Well-Being

Stress is a serious issue related to mental health that we have to face at our workplaces but it receives little attention in our context of Pakistan. Mental health issues are still associated with certain stigma and There is also inadequate availability of service for mental health among the employees serving in higher education institutions. Persistent stress, therefore, results in mental health disorders like anxiety, depression, burnout among other predicaments hence reducing productivity even further. Considering these though it becomes the prime responsibility of Pakistani HEIs to provide mental health support at workplaces in the form of counseling services and workshops for stress management at the work place.

vii. Policy Implications

Based on the results of current study, it can be concluded that it is high time that the policymakers of Pakistan started paying more attention to the working conditions of employees working in the context of higher education institutions. Stress sources may be of individual and/or of organizational nature and both these aspects have to be covered with effective stress policies including workload, work-life balance, institutional support, resources, and leadership practices. It is evidenced that the adoption of national frameworks at the workplace for employees’ well-being, health, and organization’s development enhanced productivity and employees’ satisfaction in the higher education sector. Also, a proper distribution of the government’s financial resources for the development of the capacity and infrastructure will assist HEIs to handle the organisational stress levels more efficiently.

viii. The following are the reasons why leadership and organizational culture are crucial in the workplace

The issue of stress is something that should be well managed within the HEIs and this can only be achieved through proper leadership. Lack of quality leadership at the workplace, lack of communication and support, and inability to resolve conflicts will increase the level of stress within an organization and demoralize staff. Promoting leadership qualities in the employees of the Pakistani HEIs will go a long way to produce positive organizational environment that ensures the well-being of all employees to promote productivity. Sometimes providing administrators and department heads with training that aimed at stress, team work, and communication in the organization is effective in ensuring positive and supportive work environment.

The consequences of stress in relation with employees’ performances in the higher education institutions in Pakistan are manifold with regards to academic results, official performance, employees turnover and creativity. In the same way, different stressors at the individual and at the organizational level may be managed, therefore, creating healthier, productive, and innovative HEIs in Pakistan. Stress management programs, better leadership practices, and the adoption of stress supportive policies form a core strategy as a way of improving the performance of the higher learning institutions in the country. All these measures, not only beneficial to the health of the employees, but also will also help in stabilizing and enhancing the future of the higher education System in Pakistan.

5.2. Policy Implications

This study highlights the importance of policy-based intervention at institutional and national level to tackle the behavioral stress and to ensure sustainable higher education system in Pakistan. It is recommended that institutions should focus on prevention and intervention of stress by putting in place policies that cover all angles of stress management. Such policies should detail specific steps to be followed when recognizing sources of stress at work, establish rules on how to strike a balance between work and the rest of the life, and guarantee accessible mental health support for all workers.



Figure 10: Diagram of Implications of Stress on HEI’s in Pakistan

In addition, there is the need to incorporate properly targeted and designed higher education personnel workplace wellness programs. Examples of such programs may include conducting stress management classes, practicing mindfulness and developing coping mechanisms. On-campus fitness centers, healthy food, and other service provisions that ensure ergonomic workplace assessment could also be important in promoting physical health and reducing stress.

Last but not the least, promoting innovation and creativity does not only require formal support structures but first and foremost other support mechanisms than stress management. There are four general guidelines on how institutions should tackle research funding: There should be clear routes for funding, there should be provided incentives for interdisciplinary collaboration, there should be provided focus on innovative teaching and research initiatives. Thus, the academic organizations in Pakistan can create a supportive environment that would help the employees to be healthy and innovative; as a result, the higher education institutions

can develop the academic community that will be ready to meet the requirements of the 21st century (De Carlo et al., 2019; Sonnenschein et al., 2022; Y. Wang et al., 2021).

5.3. Challenges and Limitations

As important as it is to consider behavioral stress within the higher education sector in Pakistan, it is also important to consider the challenges and limitations towards the implementation of effective interventions. Lack of resources especially in the public sector universities may be a major challenge in implementing elaborate stress management programs or even offering sufficient mental health services. It is also possible that institutions may have to look at ways of optimizing current available resources for example through engagement of community-based organizations or incorporating stress management into professional development activities (Shafique Khan et al., 2019).

In addition, cultural beliefs play a major role in the definition of stress and seeking for help. Sometimes, people experience mental health problems and may hide them due to the stigma that is attached to such problems, and therefore, they may not report stress or seek help. These cultural barriers can only be addressed by understanding the cultural differences and then coming up with culturally sensitive strategies that will increase mental health literacy as well as reduce the stigma that is associated with seeking professional help among the members in the higher learning institutions.

Last but not the least, it is important to understand stress management and innovation enhancement are not one time and for all processes but continuous long-term processes. In other words, one cannot achieve effective change by randomly introducing one program or another or by adopting certain policies. The organizations must promote the welfare of the human resources, enhance the communication and support the continuous development of both the personnel and the organization.

6. Conclusion

6.1. Summary of Key Points

In this paper, the author has discussed a crucial concern that is behavioral stress in Pakistan's higher education and its effects on the employees' productivity and innovation. This paper has shown that stress is complex by distinguishing between acute and chronic stress and also by stressing on the negative impact of a continuous exposure to stressors on individuals and organizations. These results call for stress prevention and coping efforts in academic institutions for the overall welfare of the students, staff, and faculty members of the institution.

6.2. Recommendations for Future Research

This study, therefore, lays a background for future empirical research on stress and productivity within the higher learning institutions in Pakistan. Further research could focus on the nature of stressors as faced by specific population of employees in higher learning institutions including the faculty, administrative and the technical staff. Exploring the efficacy of a range of stress management interventions with self-selected participants from these groups would be informative toward identifying effective stress management programmed for each group.

Furthermore, the longitudinal research on the effects of stress on employee health, performance, and creativity would be a great addition to knowledge on the relationship between stress and the concerned variables. Another important area for the future research is the impact of cultural factors on stress perception and help-seeking behaviors in the context of Pakistani higher education. Therefore, filling these gaps of knowledge will enable the author to advance knowledge of stress and innovation in the Pakistan's higher education sector.

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