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# MEDIATING ROLE OF PERCEIVED STRESS AMONG TEACHERS WORKING IN HIGHER EDUCATIONAL INSTITUTIONS (HEIS) WITH REFERENCE TO ICT INTEGRATION

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## Abstract

The rapid advancement of ICT has significantly impacted educational settings, necessitating teachers to adapt to new teaching methodologies and tools. While ICT offers numerous benefits in enhancing teaching and learning experiences, it also introduces challenges and stressors for educators. The article aims to investigate the relationship between ICT integration and perceived stress levels among teachers, with a specific focus on how perceived stress mediates this relationship. ICT promotes worldwide connectedness, allowing academics to participate in international collaborations, exchange scholarly knowledge, and engage in multidisciplinary research projects. Furthermore, digital platforms have optimized operational efficiency inside institutions by simplifying administrative chores such as record-keeping, scheduling, and communication. The coping mechanisms employed by teachers to manage stress related to ICT integration have significant implications for both educational practice and policy. Effective stress management can lead to more successful and sustainable ICT implementation, enhancing teaching quality and student learning experiences. When teachers are equipped with robust coping

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strategies, they are more likely to embrace technological innovations and integrate them creatively into their curricula. This can foster a more dynamic and engaging learning environment that prepares students for a technologically advanced society. Based on the findings, propose recommendations for educational policymakers and institutional leaders to enhance ICT integration practices while minimizing stressors among teachers. These recommendations may include professional development programs, technological infrastructure improvements, and organizational support initiatives. The implications of effectively managing ICT-related stress extend beyond individual teachers, contributing to the overall improvement of the educational system and the achievement of broader educational goals.

***Keywords: Technical Support, Digital Literacy, Perceived Self-Efficacy, Work-Life Balance***

***Stress Levels, Coping Mechanisms, Administrative Support, Workload and ICT integration***

## Introduction

(ICT) is crucial in influencing academic practices, research efforts, and administrative operations in higher education. The incorporation of ICT tools and platforms has fundamentally transformed teaching methodology, research partnerships, and administrative activities inside higher educational institutions. Nevertheless, despite the advantages provided by ICT, there is a complex debate over its influence on the welfare of academics. This introduction seeks to examine the correlation between information and communication technology (ICT) and stress levels among academics in higher education institutions. The introduction of ICT has revolutionized conventional teaching methods, turning them into interactive and novel learning experiences. Education has become more accessible and inclusive due to the use of virtual classrooms, online learning management systems, and multimedia materials. Although there are many benefits, the widespread use of ICT in academia has also brought about a range of difficulties, notably related to the welfare of academics. An important concern is the increasing overlap between one's career and personal life. The availability and uninterrupted connection provided by ICT devices often result in a work culture that is always active, where academics regularly engage in tasks such as replying to emails, participating in virtual meetings, or evaluating assignments outside of their normal working hours. This syndrome, known as 'techno stress,' intensifies feelings of burnout and exhaustion among academics, eventually affecting their general mental well-being and work happiness. Given the fast rate at which technology is advancing, it is crucial for academics to constantly improve their skills and adapt in order to successfully use ICT technologies. Academics sometimes experience feelings of inadequacy and anxiety due to the strain of keeping up with new technology, as well as the obligations of teaching, research, and administrative duties. Moreover, the dependence on digital communication platforms for academic exchanges might impede

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significant in-person involvement, resulting in a feeling of social seclusion and disconnection from peers and students. Another relevant issue is the widespread occurrence of digital distractions in the academic setting. The widespread use of smart phones, social media platforms, and online entertainment interfaces presents considerable obstacles to the ability of academics to sustain attention and productivity. The allure of yielding to these diversions during working hours might hinder academic productivity and lead to increased levels of stress and dissatisfaction. ICT platforms have greatly increased the demand on academics to generate high-quality research results in less time due to the fast speed of information distribution. The need for prompt publishing, together with the widespread availability of online archives and databases, has increased academic rivalry, leading to a culture where one must publish or face negative consequences. The expectation to consistently generate academic work may result in feelings of inadequacy, impostor syndrome, and increased levels of stress among academics. The process of digitizing academic assessment, including online exams and automated grading systems, comes with its own unique difficulties. Academic professionals may experience elevated stress levels due to concerns about the reliability and safety of online exams, as well as the additional effort involved in creating, conducting, and evaluating digital examinations. The integration of ICT into higher education has brought about a revolution, with far-reaching repercussions for the well-being of academics.

### *Research background*

The theoretical framework for studying the mediating role of perceived stress among teachers in Higher Educational Institutions (HEIs) with reference to ICT integration can draw upon several relevant theories and concepts from psychology, education, and organizational behavior. The relationship between ICT and stress among academicians in higher educational institutions represents a multifaceted phenomenon with far-reaching implications. By exploring the impact of ICT integration, organizational factors, and coping strategies on stress levels, this paper underscores the importance of addressing the well-being of faculty members in the digital age. Moving forward, collaborative efforts between educators, institutional leaders, and policymakers are essential to promote a healthy work-life balance and cultivate supportive environments conducive to thriving in the digital era of academia. Despite the inherent stressors associated with ICT usage, academicians employ various coping strategies to manage their well-being effectively. From time management techniques to boundary-setting practices, understanding the coping mechanisms adopted by faculty members provides valuable insights into resilience-building strategies. Moreover, fostering a culture of open communication and peer support can contribute to the creation of resilient academic communities capable of navigating technological challenges adeptly. The role of organizational support and resources in mitigating stress cannot be overstated. Educational institutions must provide adequate training, support mechanisms, and technological infrastructure to empower academicians in navigating digital landscapes effectively. Additionally,

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institutional policies regarding workload distribution, digital communication norms, and work-life balance initiatives play a pivotal role in shaping the overall well-being of faculty members. Analyzing the impact of organizational factors on stress levels elucidates the systemic challenges and opportunities for intervention within higher educational contexts.

1. **Transactional Model of Stress and Coping (Lazarus & Folkman, 1984)**: The process begins with primary appraisal, where the individual assesses whether an event is threatening, harmful, or challenging. If the event is deemed significant, secondary appraisal follows, involving the evaluation of available resources and options for coping. Effective coping strategies are then implemented, which can be problem-focused, aimed at addressing the source of stress, or emotion-focused, aimed at managing the emotional response. The outcome of this coping process influences the individual's subsequent stress levels and overall well-being, with feedback loops allowing for continual reassessment and adjustment. This model highlights the importance of cognitive processes in stress perception and the role of individual differences in stress responses.
2. **Job Demands-Resources (JD-R) Model (Bakker & Demerouti, 2007)**: The JD-R model proposes that job demands (e.g., workload, technological requirements) and job resources (e.g., support, autonomy) impact employee well-being and performance. In the context of this study, ICT integration can be considered as both a demand (e.g., mastering new technologies, adapting teaching methods) and a resource (e.g., enhancing teaching effectiveness).
3. **Organizational Support Theory**: This theory suggests that organizational support, including leadership support, resources, and training opportunities, can buffer against stressors in the workplace. In the context of this study, organizational support for ICT integration, such as access to training programs and technical assistance, may influence teachers' perceived stress levels.

### *The relationship between ICT integration and its outcomes*

As teachers strive to incorporate Information and Communication Technology (ICT) into their teaching practices, they encounter various challenges and stressors associated with technological adaptation, pedagogical shifts, and increased workload. These challenges may manifest in heightened levels of perceived stress among educators, impacting their job satisfaction, teaching effectiveness, and overall well-being. ICT integration in teaching has the potential to yield numerous positive outcomes, such as improved student engagement, enhanced learning experiences, and increased instructional efficiency. However, the extent to which these benefits materialize may be influenced by teachers' perceptions of stress related to ICT integration. Perceived stress can act as a mediating factor, influencing the translation of ICT integration into desired outcomes. Teachers experiencing high levels of perceived stress may struggle to

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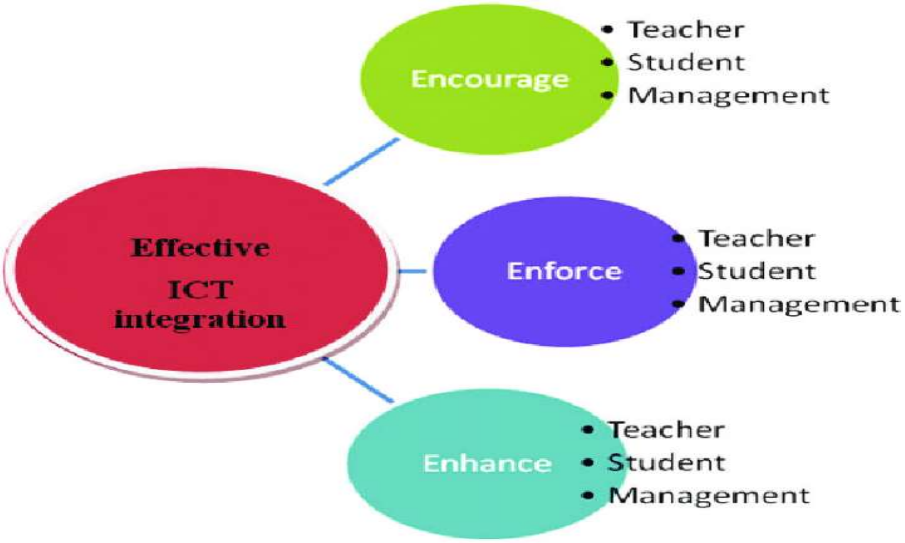
effectively utilize ICT tools, leading to suboptimal teaching practices and diminished student outcomes. Furthermore, the mediating role of perceived stress may extend to other aspects of teachers' professional lives, such as job satisfaction and overall well-being. High levels of stress stemming from ICT integration challenges may contribute to decreased job satisfaction and increased burnout among educators, ultimately affecting their retention and commitment to the profession. Moreover, prolonged exposure to stressors associated with ICT integration may have adverse effects on teachers' mental and physical health, further underscoring the importance of understanding the mediating mechanisms at play. Additionally, interventions aimed at mitigating stressors related to ICT integration, such as providing comprehensive training and support programs, fostering a culture of technological innovation, and promoting work-life balance, can help optimize the benefits of ICT integration while safeguarding teacher well-being.

Figure: 01

***ICT integration and its outcomes***




***Source:*** https://www.google.com/url?sa=i&url

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### *Review of empirical Literature and Research Agenda*

Ahmad and Hussain (2023)[2] indicated that the difficulties and stress related to the use of ICT in educational environments might negatively affect the levels of satisfaction among academic personnel. Comprehending the consequences of ICT stress on job happiness is crucial for Malaysian higher education institutions to efficiently assist their academic personnel. The research highlights the significance of adopting measures to reduce ICT-induced stress and improve work satisfaction among academics. Additional study might investigate targeted therapies and support systems designed to address the distinct difficulties encountered by academics in managing information and communication technology (ICT) stress and promoting work satisfaction. Al-Shobaki et al. (2023)[3] examined the influence of stress on the work performance of faculty members at Palestinian institutions. Their research sought to comprehend the impact of stress on the professional efficacy of faculty members in the distinctive setting of Palestinian higher education institutions. Data was acquired from faculty members via questionnaires using a quantitative technique. The investigation revealed substantial links between stress levels and work performance among faculty members. Elevated levels of stress were linked to diminished work performance, underscoring the adverse impact of stress on the professional aptitude of academic personnel. The results emphasize the need of tackling stress among faculty members at Palestinian institutions in order to improve their work performance and general welfare. Implementing strategies to reduce stresses and enhance coping mechanisms may help establish a supportive work environment that facilitates good teaching, research, and academic performance.

### *Modern ICT Trends in Teaching Technology*

The study aimed to understand how the integration of ICT tools and practices affects the well-being of academic staff. Using a quantitative approach, the research collected survey data from faculty members and conducted statistical analyses to examine the relationship between ICT usage and academic stress levels [7]. The findings highlighted a significant correlation between ICT utilization and academic stress among faculty members. It suggests that the increasing reliance on ICT tools in educational settings may contribute to heightened levels of stress among staff. Factors such as the pressure to adapt to new technologies, the blurring of boundaries between work and personal life due to constant connectivity, and the additional workload associated with ICT-related tasks were identified as potential contributors to this phenomenon. Recognizing the impact of ICT on academic stress is essential for higher educational institutions to develop strategies that promote a healthy work environment for faculty members. The study underscores the importance of balancing technological integration with measures to mitigate the negative consequences on employee well-being. Further research could explore specific interventions or policies to support faculty members in managing academic stress related to ICT usage. The study explores the intricate dynamics between work and wellbeing within the context of digital universities,

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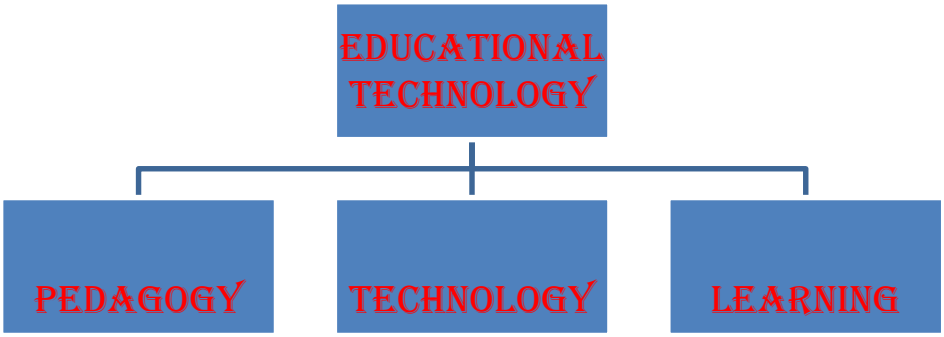
examining how the digital transformation of higher education institutions influences the professional experiences and overall wellbeing of faculty and staff. By mapping the landscape of digital universities, this research aims to uncover the unique challenges and opportunities presented by the integration of technology in higher education settings [11]. Through comprehensive analysis and empirical investigation, the study seeks to provide valuable insights into the impact of digitalization on work-related factors such as workload, job satisfaction, and work-life balance, as well as its implications for individual wellbeing and organizational culture. Ultimately, the findings of this study contribute to a deeper understanding of the complex interplay between work and wellbeing in the evolving landscape of digital universities, offering practical implications for stakeholders to enhance the quality of work and promote employee wellbeing in the digital age.

*Figure: 02*




***Research statement and objectives***

The widespread integration of (ICT) tools and platforms within Higher Educational Institutions (HEIs) has transformed the landscape of academic work. Despite the growing reliance on ICT in academic settings, there is a notable lack of research examining its implications for the stress levels experienced by academicians. Thus, the central problem addressed in this study is the dearth of understanding regarding the relationship between ICT usage and stress among academic staff. Specifically, the research seeks to investigate the extent to which ICT-related factors contribute to stress among academicians, the underlying sources of stress associated with ICT use, and the potential consequences of this stress on the mental health, job satisfaction, and overall well-being of academic professionals.

1. To examine the correlation between the levels of ICT integration in teaching practices among HEI teachers and their perceived stress levels.
2. To identify specific factors or challenges associated with ICT integration that contributes significantly to teachers' perceived stress levels.

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3. To explore the coping mechanisms employed by teachers to manage stress related to ICT integration and evaluate the effectiveness of existing support systems provided by HEIs in addressing these stressors.

## Analysis, presentation and Results

### Factor Analysis

A total of 18 difficulties were included in the study, taking into account past research and a pilot study. In addition, in order to minimise the occurrence of issues, they are categorised according to their distinctiveness via the use of the data reduction approach. Factor analysis is used to mitigate issues based on their distinctiveness. Prior to doing factor analysis, the adequacy of the data is accessed via the use of the following tests. The sample of 200 respondents from higher educational institutions is selected using simple random technique. An interview schedule was framed and the sample respondents are personally interacted for obtaining clear information about the research problem. 5 point Likert scale was used to measure factors influencing the mediating role of perceived stress

**KMO and Bartlett's Test**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin | | 0.808 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 6396.180 |
| | df | 153 |
| | Sig. | 0.000 |

The KMO test indicates a significant value of 0.808, which is more than the threshold of 0.700. The Bartlett's Test of Sphericity indicates a value of 6396.180 for the degrees of freedom, namely 153. The significance threshold is 1% (<0.01). Therefore, it may be inferred that the data gathered for doing factor analysis is sufficient and suitable for further study. The communalities of the 18 criteria are assessed in the following manner. Educators who derive satisfaction from their work are more likely to approach technological innovations with enthusiasm and creativity, leveraging ICT tools to enhance teaching, research, and administrative tasks. Conversely, dissatisfaction stemming from factors such as excessive workload, inadequate resources, or lack of recognition can contribute to elevated stress levels and hinder engagement with ICT initiatives. Motivation, intrinsic and extrinsic, serves as a driving force behind individuals' efforts to adapt to technological advancements and incorporate ICT into their academic endeavors. Intrinsic motivation, arising from personal interest, curiosity, and a sense of purpose, fuels individuals' willingness to explore new technologies and experiment with innovative approaches to teaching, learning, and scholarly pursuits. Extrinsic motivators, such as rewards, recognition, and career advancement

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opportunities, can further incentivize individuals to invest time and effort in mastering ICT skills and utilizing technology effectively. Conversely, factors that undermine motivation, such as perceived barriers to ICT adoption, limited access to training and professional development opportunities, or a lack of tangible rewards for ICT-related efforts, may hinder individuals' willingness to engage with technology and exacerbate academic stress.

**Communalities**

| Sl. No | Factors | Initial | Extraction |
|---|---|---|---|
| 1. | Administrative Support | 1.000 | .639 |
| 2. | Coping Mechanisms | 1.000 | .726 |
| 3. | Digital Literacy | 1.000 | .844 |
| 4. | Family and Community Support | 1.000 | .615 |
| 5. | Physical Environment | 1.000 | .680 |
| 6. | Perceived Self-Efficacy | 1.000 | .747 |
| 7. | Peer Support | 1.000 | .868 |
| 8. | Online Environment | 1.000 | .912 |
| 9. | Motivation | 1.000 | .720 |
| 10. | Job Satisfaction | 1.000 | .831 |
| 11. | ICT Infrastructure | 1.000 | .655 |
| 12. | Recognition | 1.000 | .638 |
| 13. | Workload | 1.000 | .861 |
| 14. | Work-Life Balance | 1.000 | .836 |
| 15. | Technical Support | 1.000 | .872 |
| 16. | Student Interactions | 1.000 | .826 |
| 17. | Stress Levels | 1.000 | .912 |
| 18. | Rewards | 1.000 | .824 |
| | Extraction Method: PCA | | |

Factor analysis is used to validate the issues encountered by travellers while using utilities. This tool is used to examine the variability of a certain component in order to optimise it from a given list. (PCA) is used to extract a limited number of components that may explain the variability seen in a large number of metrics. Data reduction is a commonly used approach in research when a researcher chooses not to include all of the measurements in their analysis. The initial assumption is set to 1 and the extracted value is shown in the extraction column. The communalities of the components are computed using Principal Component Analysis. All the components have extraction values greater than 0.600. Therefore, it may be inferred that all the criteria are suitable for study. The overall variance of the model is computed and displayed in the table below.

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**Total Variance**

| Factors | Initial Eigen values | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 7.257 | 40.316 | 40.316 | 7.257 | 40.316 | 40.316 | 4.854 | 26.968 | 26.968 |
| 2 | 3.130 | 17.387 | 57.703 | 3.130 | 17.387 | 57.703 | 3.527 | 19.597 | 46.566 |
| 3 | 1.995 | 11.084 | 68.788 | 1.995 | 11.084 | 68.788 | 3.066 | 17.034 | 63.600 |
| 4 | 1.526 | 8.476 | 77.264 | 1.526 | 8.476 | 77.264 | 2.460 | 13.664 | 77.264 |
| 5 | .819 | 4.551 | 81.815 | | | | | | |
| 6 | .576 | 3.202 | 85.017 | | | | | | |
| 7 | .511 | 2.841 | 87.858 | | | | | | |
| 8 | .444 | 2.466 | 90.325 | | | | | | |
| 9 | .377 | 2.094 | 92.419 | | | | | | |
| 10 | .315 | 1.748 | 94.166 | | | | | | |
| 11 | .273 | 1.518 | 95.684 | | | | | | |
| 12 | .191 | 1.063 | 96.747 | | | | | | |
| 13 | .186 | 1.035 | 97.783 | | | | | | |
| 14 | .148 | .822 | 98.605 | | | | | | |
| 15 | .096 | .533 | 99.138 | | | | | | |
| 16 | .083 | .463 | 99.601 | | | | | | |
| 17 | .037 | .204 | 99.805 | | | | | | |
| 18 | .035 | .195 | 100.000 | | | | | | |
| Extraction Method: PCA | | | | | | | | | |

The table above indicates that three components have initial Eigen values greater than 1. The cumulative variation explained by these three components is 77.26%. This exceeds 60%. Therefore, the three components are then subjected to additional investigation. The table below displays the factors associated with each component in the component matrix. The complex interplay between administrative support, workload, recognition, and rewards underscores the need for holistic approaches to address academic stress and promote effective ICT utilization within educational contexts. By prioritizing supportive administrative structures, implementing strategies to manage workloads effectively, and fostering a culture of recognition and appreciation for ICT-related endeavors, academic institutions can create environments conducive to innovation, collaboration, and well-being. Moreover, efforts to align organizational policies and practices with

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the evolving needs and aspirations of faculty and staff members can facilitate a positive feedback loop wherein ICT serves as an enabler of professional growth, job satisfaction, and resilience in the face of academic stressors. Peer support, family and community support, job satisfaction, and motivation are essential factors that profoundly influence academic stress and the effective utilization of ICT within educational contexts. Peer support and student interactions play a pivotal role in shaping the academic experience and can significantly impact individuals' ability to cope with stress and engage with ICT. Collaborative learning environments fostered through peer interactions provide opportunities for knowledge sharing, skill development, and emotional support. Peer support networks can offer valuable assistance in navigating academic challenges, including those related to technology integration and utilization. Moreover, peer collaboration and social connections can mitigate feelings of isolation and enhance resilience in the face of academic stressors, thereby promoting more positive attitudes towards ICT adoption and usage. Family and community support represent crucial sources of encouragement, resources, and emotional sustenance for students and educators alike. Strong familial and community ties can serve as buffers against academic stress by providing a sense of belonging, stability, and perspective. Supportive family environments that prioritize education and technological literacy can facilitate the effective integration of ICT into academic practices. Additionally, community-based resources and networks can offer supplementary learning opportunities and access to technology infrastructure, further enhancing individuals' capacity to engage with ICT in meaningful ways. Job satisfaction, encompassing individuals' perceptions of fulfillment, autonomy, and recognition within their professional roles, profoundly influences their experiences with academic stress and ICT utilization.

**Component Matrix**

| Problems | Variables | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| Administrative Support | 0.618 | | | |
| Coping Mechanisms | 0.702 | | | |
| Digital Literacy | 0.735 | | | |
| Family and Community Support | 0.747 | | | |
| Physical Environment | 0.658 | | | |
| Perceived Self-Efficacy | 0.612 | | | |
| Peer Support | 0.698 | | | |
| Online Environment | 0.715 | | 0.587 | |
| Motivation | 0.650 | | 0-.609 | |
| Job Satisfaction | 0.621 | | | |
| ICT Infrastructure | 0.633 | 0.568 | | |
| Recognition | 0.645 | 0.522 | | |

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| | | | | |
|---|---|---|---|---|
| Workload | 0.724 | 0.531 | | |
| Work-Life Balance | 0.680 | | | 0.712 |
| Technical Support | 0.622 | | | 0.785 |
| Student Interactions | 0.617 | | | |
| Stress Levels | | | | .812 |
| Rewards | | | | .770 |
| Extraction Method:PCA | | | | |
| a. 4 components extracted. | | | | |

The components matrix displays the elements that are categorised inside each component. The final and valid component items are determined by using the rotated matrix. The Verimax rotational component matrix was used. Stress levels, influenced by a myriad of factors including academic workload, performance expectations, and interpersonal dynamics; exert a profound influence on individuals' experiences with ICT and academic engagement. Coping mechanisms, encompassing adaptive strategies for managing stress and promoting resilience, play a pivotal role in mediating the relationship between stress and ICT utilization. Effective coping strategies, such as mindfulness practices, time management techniques, and social support networks, empower individuals to navigate academic challenges and technological complexities with greater ease. The influence of administrative support, workload, recognition, and rewards on academic stress and ICT utilization within educational settings is a critical area of inquiry that encompasses various dimensions of organizational dynamics and individual experiences. Administrative support serves as a cornerstone for effective functioning within academic institutions, providing resources, guidance, and infrastructure necessary for productive engagement with ICT. Adequate administrative support entails streamlined processes, responsive communication channels, and proactive measures to address issues related to technology integration and implementation. Conversely, deficiencies in administrative support can impede the effective utilization of ICT, exacerbating stress levels among faculty and staff members who may grapple with bureaucratic obstacles or inadequate support systems. Workload, comprising the volume and complexity of tasks assigned to individuals within academic roles, represents a significant determinant of stress levels and ICT utilization. Excessive workloads can overwhelm individuals, leaving little time or energy for leveraging ICT tools and resources to their full potential. Moreover, the pressure to meet demanding deadlines and performance expectations in the face of heavy workloads can amplify stress levels, adversely affecting job satisfaction and well-being. Recognition and rewards, including formal acknowledgment of contributions, opportunities for professional development, and tangible incentives, play a pivotal role in shaping motivation, engagement, and job satisfaction among academic personnel.

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Rotated Component Matrix

| Variables | | Component | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| ICT Infrastructure | Technological Factors | 0.717 | | | |
| Technical Support | | 0.652 | | | |
| Digital Literacy | | 0.702 | | | |
| Perceived Self-Efficacy | | 0.738 | | | |
| Work-Life Balance | | 0.648 | | | |
| Stress Levels | | 0.761 | | | |
| Coping Mechanisms | | 0.630 | | | |
| Administrative Support | Institutional Factors | | 0.785 | | |
| Workload | | | 0.697 | | |
| Recognition | | | 0.811 | | |
| Rewards | | | 0.727 | | |
| Peer Support | Social Factors and Psychological Factors | | | 0.724 | |
| Student Interactions | | | | 0.569 | |
| Family and Community Support | | | | 0.508 | |
| Job Satisfaction | | | | 0.614 | |
| Motivation | | | | 0.601 | |
| Online Environment | Environmental Factors | | | | 0.699 |
| Physical Environment | | | | | 0.732 |
| Extraction Method: PCA.<br>Rotation Method: VKM. | | | | | |
| a. Rotation converged in 5 iterations. | | | | | |

The component matrix above indicates that there are a total of 18 difficulties that have been categorized into 4 distinct components. They are designated with the following names.The first component is named as Technological Factors. It includes the ICT Infrastructure, Technical Support, Digital Literacy, Perceived Self-Efficacy, Work-Life Balance, Stress Levels and Coping Mechanisms. The second components are named as Institutional Factors. It consists of administrative Support, workload, recognition and rewards. The third components are called as Social factors and psychological factors which include peer support, student interactions, family and community Support, Job Satisfaction and Motivation. Environmental Factors are classified into Online Environment and Physical Environment. A robust ICT infrastructure forms the backbone of modern educational environments, facilitating seamless access to digital resources, communication platforms, and online learning tools. Inadequacies or disruptions in this

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infrastructure can lead to frustration, hindering academic progress and contributing to heightened stress levels among students and faculty alike. Technical support services play a pivotal role in mitigating such challenges, offering timely assistance and troubleshooting solutions to alleviate the burden of ICT-related issues. Digital literacy, encompassing the proficiency in navigating digital platforms, utilizing software applications, and critically evaluating online information, is indispensable in today's technology-driven educational landscape. Individuals with higher levels of digital literacy are better equipped to harness the potential of ICT for learning purposes, thereby experiencing reduced stress associated with technological barriers or uncertainties. Those with a strong sense of self-efficacy regarding ICT are more likely to approach technological hurdles with confidence, employing adaptive strategies to address difficulties and enhance their academic performance. Work-life balance emerges as a crucial determinant of overall well-being, encompassing the ability to harmonize academic pursuits with personal responsibilities, leisure activities, and downtime. Excessive reliance on ICT for academic tasks can encroach upon this balance, leading to heightened stress levels and feelings of overwhelm. Strategies aimed at fostering a healthy equilibrium between academic demands and personal life can mitigate the negative impact of ICT-related stressors. Recognition of achievements in utilizing ICT for teaching, research, or administrative purposes can foster a sense of validation and appreciation, motivating individuals to further invest in leveraging technology to enhance their professional practices. Conversely, the absence of recognition or rewards for ICT-related efforts may undermine morale and diminish enthusiasm for embracing technological innovations, leading to disengagement and increased stress levels. The online environment, characterized by virtual classrooms, digital platforms, and remote learning technologies, has become increasingly prevalent in modern education. While the online environment offers numerous benefits, such as flexibility, accessibility, and diverse learning opportunities, it also presents unique challenges that can contribute to academic stress. Factors such as technological glitches, connectivity issues, and the lack of face-to-face interaction may disrupt learning experiences and heighten feelings of frustration or isolation among students and educators. Moreover, the proliferation of digital distractions and the constant influx of information in online settings can overwhelm individuals, leading to difficulty focusing, time management challenges, and heightened stress levels. Conversely, the physical environment, encompassing the design, layout, and amenities of learning spaces, also exerts a significant influence on academic stress and ICT utilization. Well-designed physical environments that are conducive to learning, collaboration, and concentration can enhance students' engagement and overall well-being. Adequate lighting, comfortable seating, and ergonomic furnishings contribute to physical comfort and reduce distractions, thereby promoting sustained attention and productivity. Additionally, access to essential resources, such as reliable internet connectivity, modern technology tools, and quiet study areas, is essential for facilitating effective ICT usage and minimizing stress associated with logistical barriers or equipment malfunctions. The interplay between the online environment and physical environment is complex and multifaceted, with each exerting both direct and indirect effects on academic stress and ICT

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utilization. For example, a poorly designed physical environment lacking adequate technology infrastructure may exacerbate stress levels by impeding students' ability to access online resources or participate in virtual learning activities. Conversely, a thoughtfully designed physical environment that integrates seamlessly with the online learning environment can enhance students' sense of belonging, motivation, and engagement with ICT-enhanced instructional practices. Furthermore, the alignment between the online and physical environments is crucial for optimizing students' learning experiences and mitigating stressors associated with transitions between virtual and face-to-face learning modalities. Seamless integration of technology tools, consistent communication channels, and cohesive instructional design across both environments can promote continuity, coherence, and efficiency in academic workflows, thereby reducing cognitive load and facilitating smoother transitions between online and offline learning activities.

## Discussion

Alqudah and Mohammed (2022)[5] examined the impact of technology use on the level of work-related stress among faculty members at the Hashemite University. Their research sought to comprehend the interplay between the adoption of technology and its effects on the well-being of academic personnel. The study used a quantitative methodology, including survey data gathered from faculty members. The results indicated that an increasing dependence on technology in educational environments may lead to elevated levels of stress among faculty members. This phenomenon may be ascribed to a multitude of variables, including the need to conform to swiftly advancing technologies, the merging of work and personal life owing to continual connection, and the increased burden connected with technology-related duties. Gaining insight into the influence of technology on job-related stress is essential for universities and educational institutions to devise measures that foster a salubrious work atmosphere for faculty members. This research highlights the significance of maintaining a balance between using technologies and implementing efforts to reduce the adverse effects on employee well-being. Additional research in this field might include particular therapies or policies aimed at assisting faculty members in coping with work-related stress linked to the usage of technology. Al-Harbi (2022) [4] investigated the impact of technical stress on the performance of faculty members at Saudi institutions, with a specific focus on the moderating effects of perceived organizational support. The research sought to investigate the impact of technology-induced stress on the performance of faculty members, as well as the potential effect of support on this connection. Data were obtained from faculty members in Saudi institutions via the distribution of questionnaires, using a quantitative technique. The results indicated a substantial detrimental effect of techno stress on the performance of faculty members. Comprehending the interplay of techno stress, perceived organizational support, and faculty performance is essential for Saudi institutions to adequately assist their academic personnel. The research highlights the significance of organizational support structures in mitigating the negative

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effects of techno stress on teacher performance. Additional investigation should focus on precise methodologies for improving institutional support and reducing technological stress among faculty members in higher education establishments.

### *Coping Mechanism*

Teachers employ a variety of coping mechanisms to manage stress related to the integration of Information and Communication Technology (ICT) in the classroom. These mechanisms can be broadly categorized into problem-focused and emotion-focused strategies. Problem-focused strategies involve proactive steps to address the sources of stress, such as seeking professional development opportunities to enhance their ICT skills, collaborating with colleagues to share best practices, and utilizing support from IT staff to troubleshoot technical issues. Teachers may also adopt time management techniques to balance the demands of ICT integration with other teaching responsibilities. Emotion-focused strategies are aimed at managing the emotional impact of stress. These might include seeking social support from colleagues, friends, or family; practicing mindfulness or relaxation techniques to reduce anxiety; and maintaining a positive attitude towards technology by focusing on its potential benefits for enhancing student learning. Additionally, teachers may set realistic expectations for themselves and their students, recognizing that mastering ICT tools is a gradual process. By employing a combination of these coping mechanisms, teachers can better manage the stress associated with ICT integration, leading to more effective teaching and improved student outcomes.

### *Implications of the study*

The implications of studying stress related to ICT integration in education are multifaceted, affecting policy, practice, and future research. Understanding the specific stressors teachers face when integrating ICT can inform the development of targeted support systems and professional development programs. These programs should not only enhance teachers' technical skills but also build their capacity for emotional resilience and effective stress management. On a policy level, insights from such studies can guide the allocation of resources towards creating a supportive infrastructure, including access to reliable technology, technical assistance, and mental health resources. For educational leaders, the findings emphasize the importance of fostering a collaborative school culture where teachers can share strategies and support each other in navigating ICT challenges. Additionally, recognizing the stress associated with ICT integration can help in designing realistic implementation timelines and setting achievable expectations for both teachers and students. Future research implications include exploring the long-term effects of ICT-related stress on teacher performance and student outcomes, as well as identifying the most effective coping mechanisms and support structures. Overall, addressing the stress linked to ICT

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integration is crucial for creating a positive educational environment that leverages technology to enhance learning while maintaining teacher well-being.

## *Conclusion*

The research aims to examine the impact of ICT-related factors on stress levels among academicians. It also aims to identify the sources of stress related to ICT use and explore the potential consequences of this stress on the mental health, job satisfaction, and well-being of academic professionals. The research intends to give insights into the dynamics of ICT-induced stress inside HEIs. The online environment and physical environment each exert significant influences on academic stress and ICT utilization within educational contexts. By prioritizing the design of supportive learning environments that address the unique needs and preferences of students and educators, educational institutions can foster resilience, engagement, and success in the digital age. Moreover, efforts to promote synergy between the online and physical environments can enhance the effectiveness of ICT integration and contribute to more seamless, holistic learning experiences for all stakeholders. The interplay between ICT infrastructure, technical support, digital literacy, perceived self-efficacy, work-life balance, stress levels, and coping mechanisms constitutes a complex nexus shaping both academic stress and ICT utilization. By understanding and addressing these interconnected factors, educational institutions can foster environments conducive to optimal learning outcomes and well-being in the digital age. Peer support, family and community support, job satisfaction, and motivation are integral determinants of academic stress and ICT utilization within educational settings. By fostering supportive social networks, cultivating environments conducive to job satisfaction and motivation, and aligning organizational practices with individuals' intrinsic and extrinsic incentives, educational institutions can promote resilience, innovation, and well-being amidst the challenges of modern education. Moreover, efforts to enhance collaboration, communication, and shared learning experiences can maximize the transformative potential of ICT in shaping the future of teaching and learning.

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