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Impact Of Digital Time Management And Autonomy On Work-Related Stress Among University Teachers: Mediating Role Of Organizational Communication

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Abstract
The rapid transition toward digital academic spaces presents both positive fronts and difficult aspects to university instructors when handling their occupational stress. The research investigates how digital time management and autonomy affect work-related stress in university teachers through organizational communication mechanisms. A quantitative analysis was employed and researchers distributed structured questionnaires to 300 university instructors working in both public and private institutions throughout Punjab, Pakistan. A Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis method was used for the evaluation of theoretical relationships. The research proves conventional thinking about autonomy must change since it demonstrates both its benefits and drawbacks and necessitates united technological progress with communicative practices. Universities must establish training courses to develop digital competencies and create open communication systems as their practical needs. University administrators should achieve a balance between allowing independent work and providing defined feedback channels to support their teaching staff properly. The research findings demonstrate the need for public institutions to combine technology tools with complete health programs that base their stress reduction methods on communication strategies. The research adds new knowledge to occupational stress research by revealing how organizational communication works as a mediator between digitalized academic environments, with open communication methods to build teacher mental health and overall organizational strength.

Keywords: *Digital Time Management, Autonomy, Organizational Communication, Work-Related Stress, University Teachers, PLS-SEM.*

Introduction

Today's academic environment presents university lecturers with several obstacles, including bureaucracy, time constraints, and workload. Additional methods that have made it possible to improve methods of managing these demands with more effective time management techniques include new media technologies (Spence et al., 2020). Apart from the benefits of using digital time management techniques, university instructors are becoming more concerned about stress due to performance expectations resulting from the usage of technology. One further aspect that emerged as a significant factor affecting teachers' job satisfaction and stress levels was their degree of autonomy, or their ability to make choices related to their profession. It is becoming well recognized that there is a need to determine how corporate communication might operate as a mediator between time management techniques and autonomy while also lowering stress levels. Understanding these factors may help to reduce work-related stress and improve the wellbeing of teachers (Gagnon, 2022).

Workplace stress has become a prevalent issue in educational institutions worldwide, affecting university instructors (Flynn et al., 2022). There are applications that might be useful for efficient time management, but they also bring up new problems that can be stressful. Therefore, further study is still needed to determine how a teacher's ability to manage their time in a digitalized work environment affects their level of stress and autonomy (Reysen et al., 2022). Furthermore, it is demonstrated that the primary component in this dynamic that can mediate the relationship is the caliber of corporate communication. An academic organization may coordinate and sustain itself more efficiently with proper communication, which reduces the stress that is shown in the instructors. Thus, the purpose of this research is to determine how digital time management and autonomy affect work-related stress, with a focus on the mediating function of organizational communication (K. T. Lisnyj et al., 2021).

Statement of Problem

The danger of developing work-related stress is more directly correlated with the balancing time demand for technology and digital time management, flexibility, and company-internal communication. According to research by Hayes et al. (2020), teachers who are more autonomous and adept at managing their time in digital settings report lower levels of stress—but only if they also have access to supportive and transparent organizational communication. This suggests that workers may not be able to reduce pressure solely through self-organization, digital time management, and autonomy, and that effective use of these tools of freedom may depend on effective communication within the organization. However, if they are not supported by institutional communicational activities, the research also indicates possible stresses related to autonomy and digital technologies (Isaak et al., 2022).

Research on digital time management, autonomy, and organizational communication from the academic setting is, nonetheless, lacking, particularly for university instructors. A little of research has been done to evaluate the combined impact of these variables on job stress; they are often examined separately. Additionally, organizational communication is taken into consideration. However, the scholarly literature offers limited guidance on how and when to modify communication practices to support the integration of digital time management tools and autonomy in academic settings. This research elaborates on the literature that reveals the significant influence that digital time management and autonomy have on university professors' work-related stress. These elements, however, are only successful in proportion to how well the organization communicates.

1. Work related Stress

One of the main issues raised is the stress that university professors have at work because of the many obligations entrusted to them, which include teaching, research, administrative duties, and student support services. Numerous studies demonstrate the influence of constrained timetables, contradictory expectations, and the workload associated with academics on high levels of stress in this area of work (K. Lisnyj et al., 2022). these factors have a detrimental impact on staff members' mental health, which leads to burnout, emotional weariness, and low satisfaction with the courses they teach. These stresses are made worse by the fast changes in educational systems that indicate rapid progress and the expectations of technologically sophisticated people (Tharaldsen et al., 2022).

2. Digital Time Management

It has been suggested that integrating technology into time management and planning might help reduce stress in academic settings by increasing productivity and reducing chaos. For instructors, some of the controlled and quantifiable components include to-do lists, collaboration programs for work and product scheduling, and calendar and task apps. According to research, focusing on these strategies may reduce stress and enhance work-life balance (García-Martínez et al., 2022). However, other academics draw attention to the fact that the use of ICT creates a "anytime/anywhere" work paradigm that blurs the lines between work and personal life and puts more pressure on employees (Chen & Lim, 2022). Second, although working efficiently is aided by technology and is thought to save time, it also relies on an individual's proficiency with the tool and the surroundings in which it is used (Koppenborg et al., 2022).

3. Autonomy

"Autonomy," which refers to an employee's ability to make choices and choose how to carry out a certain task, is a widely accepted notion in organizational culture. One of the fundamental psychological demands suggested by Ryan and Deci's Self-Determination Theory is autonomy (Gagnon, 2022). Teachers in academic environments with more autonomy report feeling more satisfied with their jobs and experiencing less stress, according to a survey conducted among academics (Kim et al., 2022). Conversely, restricting autonomy might make instructors feel in control, which would lead to more tension and annoyance. Research has shown that autonomy may moderate the link between work demands and strain; nevertheless, when combined with high job expectations and inadequate support, autonomy may have a direct or inverse effect on stress. Thus, determining the degree of autonomy and workload required to evaluate the impact of teaching on stress requires consideration of both factors.

4. Organizational Communication

Organizational Communication plays a mediating function between the kinds of work that the organization approves and the favorable opinion that top executives have of them inside the organization. There is evidence to imply that the level of organizational communication moderates job demands. The definition of inter-organizational communication is the amount of procedural organizational communication as well as the messages that are sent between administrators, professors, and staff inside an organization (Tharaldsen et al., 2022). Stress is brought on by poor communication, miscommunication, a lack of adequate support, and feelings of abandonment or loneliness. Conversely, when lines of communication are open, accommodating, and pleasant, people feel like they belong to the team, which reduces stress brought on by hazy responsibility boundaries (Koppenborg et al., 2022). In addition to facilitating effective coordination and support systems, organizational communication also increases independence across time management systems.

By doing this, university instructors may operate in a less stressful setting where they get all the necessary support, coaching, and criticism. Moreover, proficient organizational communication strategies facilitate instructors' effective use of digital time management technologies by giving them access to the knowledge and resources they need to complete their assignments (Kim et al., 2022).

Research Objectives

- To examine the effect of digital time management on work-related stress among university teachers.
- To assess the influence of autonomy on work-related stress in the academic setting.
- To explore the mediating role of organizational communication between digital time management, autonomy, and work-related stress.
- To provide recommendations for improving organizational communication strategies to mitigate stress among university teachers.

Significance

The study is important for the teachers, heads and researchers for the time management and stress management, for the teachers if they are given autonomy in the work the how their work-related stress can be reduced. For the researchers it gives pathway to work on factors creating stress for the university teachers and the role of digital time management and work-related stress.

Delimitation

The study is delimited to the university instructors in Punjab, Pakistan, who work at both public and private institutions.

Methodology

Research Design

To evaluate the impact of digital time management and autonomy on work-related stress among university professors, this study employs a quantitative research methodology, with an emphasis on the moderating function of organizational communication. The research strategy used in this work is based on survey data, and the data analysis method is PLS-SEM.

Population and Sample

The study's target demographic consists of university instructors in Punjab, Pakistan, who work at both public and private institutions. 300 instructors were picked to represent the population of interest; this sample size is consistent with PLS-SEM analysis, which indicates that there are at least 10 times as many structural routes leading to a latent variable as there are possible (Isaak et al., 2022). The sample size is sufficient to provide a high level of confidence in the results' generalizability, especially when analyzing an extended model with numerous latent variables.

Sampling Technique

A stratified random sampling approach was used, accounting for gender, years of teaching experience, and the kind of institution the participant taught in—public or private—to improve variance and variety of the sample. This method was used to try to address the problem of sample selection bias to make sure that the sample created accurately reflected Punjab's university teaching population.

Information Gathering

A structured questionnaire that was intended to assess the main research variables—decision-making, communication within the company, stress at work, and time management in relation to working in a digital environment—was used to gather data. As a result, the questionnaire included closed-ended items on a 5-point Likert scale (Strongly Disagree = 1; Disagree = 2; Neutral = 3; Agree = 4; Strongly agree = 5).

Reliability Analysis

Table 1: *Reliability and Validity Values*

Construct	Cronbach Alphas	Composite Reliability (CR)	AVE
Digital Time Management	0.812	0.839	0.691
Autonomy	0.821	0.841	0.658
Work-Related Stress	0.795	0.823	0.712
Organizational Communication	0.775	0.807	0.602

The Cronbach's alpha values for Digital Time Management, Autonomy, work related stress, and Organizational Communication are 0.812, 0.821, 0.795, and 0.775, respectively. Such significant components surpass the standard threshold of 0.7, which is applied to each construct to indicate strong dependability. Composite reliability (CR) is an additional internal consistency evaluation that looks at both item loadings and shared variations across items. The values obtained for Digital Time Management, Autonomy, Work-Related Stress, and Organizational Communication are 0.839, 0.841, 0.823, and 0.807, respectively. All constructions have acceptable values, which are more than seven times greater than the ideal reduction value. The commonly used Average Variation Extracted (AVE) test measures the amount of variation across variables caused by measurement error in comparison to the variance caused by the true construct. The trial values for Digital Time Management, Autonomy, work related stress, and Organizational Communication are 0.691, 0.658, 0.712, and 0.602, respectively. While the value of AVE for Digital Time Management, work related stress, and Organizational Communication launches exceeds 0.5, it falls somewhat short for Autonomy.

Table 2: *Divergent Validity Results*

Construct	Digital Time Management	Organizational Communication	Work-Related Stress	Autonomy
Digital Time Management	0.790			
Organizational Communication	0.359	0.771		
Work-Related Stress	0.513	0.121	0.739	
Autonomy	0.660	0.249	0.326	0.689

As shown in Table 2, the stereotyped validity rot matrix, a measurement that determines the correlations between the constructs of Digital Time Management, Organizational Communication, work related stress, and Autonomy, yields the following end conclusion. The populations of these gaps correspond to the correlation values of the constructs. In all situations, the correlations are less than the square root of the respective constructs' EVV, indicating significant divergent validity. The connection between Digital Time Management and Organizational Communication is 0.359, yet the square root of Digital Time Management's AVE (0.832) is larger than this correlation. Digital Time Management is determined to have a correlation coefficient of 0.513 with Work-Related Stress, and its square root does not surpass the AVE of Digital Time Management (0.832). Digital Time Management and autonomy exhibited a substantial link, as evaluated by 0.660; nevertheless,

the square of Digital Time Management AVE was 0.832. Furthermore, psychosocial capital (Organizational Communication), Work-Related Stress, and autonomy all exhibit lower degrees of convergent validity (1-value, AVE square roots) than that.

Descriptive findings of the study

Table 3: *Demographics*

		f	%
Gender	Male	221	74%
	Female	79	26%
Marital Status	Married	210	70%
	Single	90	30%
Education	Diploma	29	10%
	Masters	103	34%
	MPhil	165	55%
	PhD	3	1%
Age	Less than 30 years	93	31%
	30 to 40 years	110	37%
	41 to 50 years	67	22%
	Above 50 years	31	10%
Total		**300**	**100%**

The demographic information shows that there were 221 respondents in the total responses generated while 26% were females. There were 70% married respondents and remaining were single. There were 10% Diploma holders, 34% respondents were graduates and 55% were masters qualified. As far as the age is concerned then there were 31% respondents who were below the age of 30 years, 37% respondents were between 30 to 40-year age group, and 10% respondents were above 50 years.

Inferential findings of the study

Table 4: *PLS Test Results*

Construct	Level of Significance	Result
Digital Time Management	0.000	Accepted
Autonomy	0.000	Accepted
Work-Related Stress	0.000	Accepted
Organizational Communication	0.000	Accepted

The table 5 states that the t test results of all the variable are significant at $p < 0.05$ hence the variables are significantly affect the other variable.

Research Assumptions

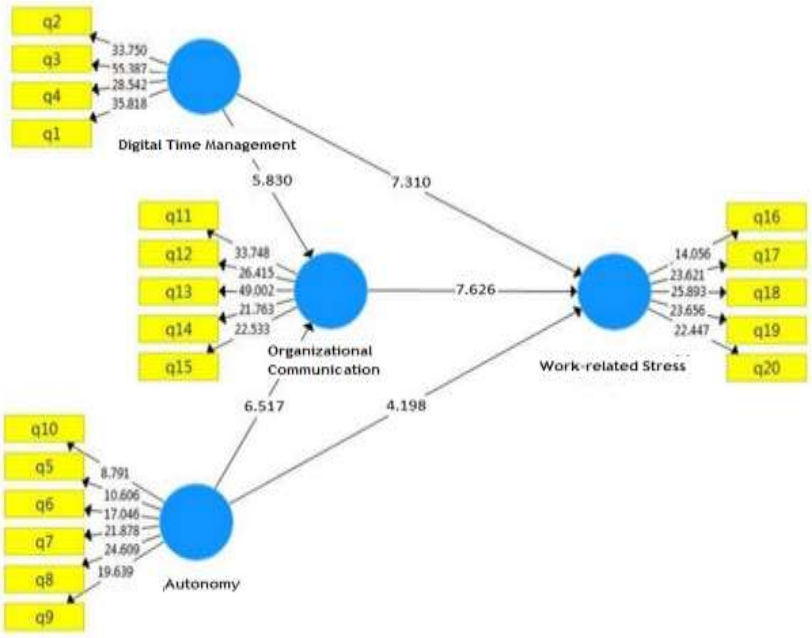

Figure 1: SmartPLS Meaningful Mode Output

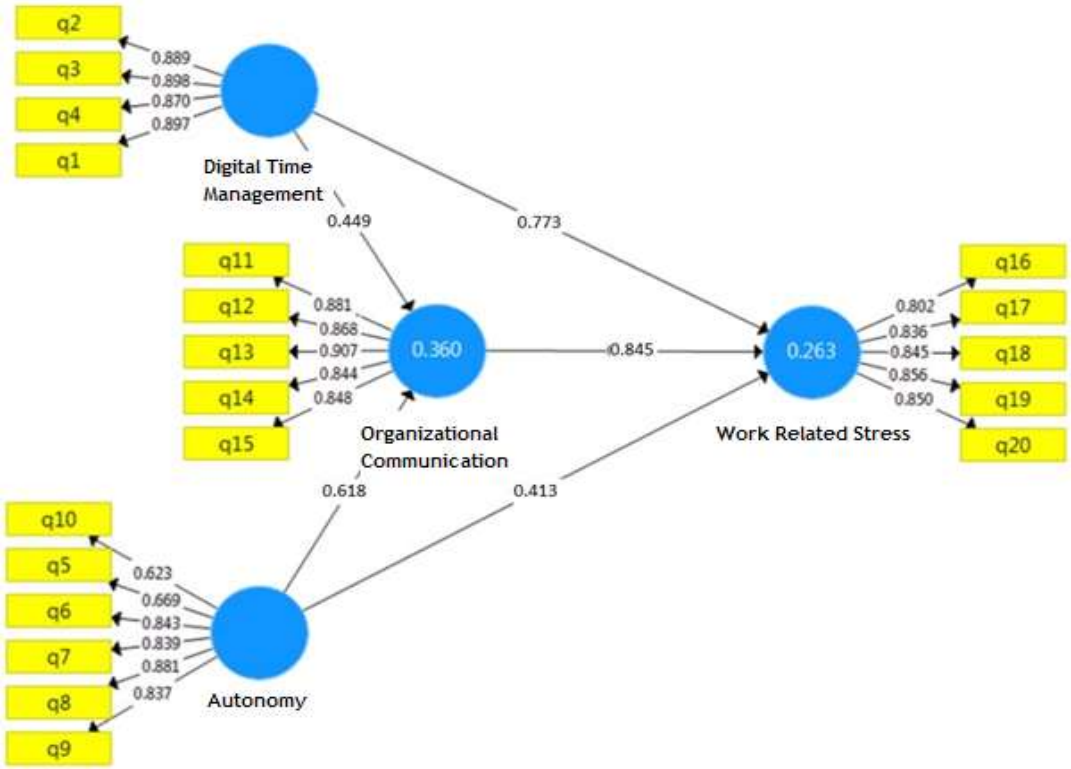

Figure 2: SmartPLS Standard Mode Output

Table 5: *Hypothesis Testing*

	Standard	Sig value	Status
H1	-0.773	0.000	Accepted
H2	0.449	0.000	Accepted
H3	-0.413	0.000	Accepted
H4	0.618	0.000	Accepted
H5	-0.845	0.000	Accepted
H6	-0.360	0.000	Accepted
H7	-0.401	0.000	Accepted

The table (5) above shows the results of the hypothesis testing for the association between Digital Time Management, autonomy, Organizational Communication, and Work-Related Stress.

H1: Digital Time Management has a significant influence on Work-Related Stress. The standard coefficient of -0.773 indicates a strong negative relation, while the p-value of 0.000 indicates statistical significance. As a result, the hypothesis must be accepted.

H2: The standard coefficient is 0.449, and the level of significance is 0.000, indicating an increasingly favorable relationship between Digital Time Management and Organizational Communication. As a result, this hypothesis cannot be rejected, and it has been proved that when teachers use Digital Time Management, they get a positive organizational communication.

H3: The coefficient is -0.413, and the P value is 0.000, indicating that Autonomy has a negative and statistically significant relationship with Work-Related Stress. As a result, the proposed hypothesis is not supported.

H4: results have found that 0.618 standard coefficient and a significance value of 0.000, hence the hypothesis is proved correct that Autonomy has a significant effect on Organizational Communication

H5: The coefficient value -0.845 and a significance value of 0.000, indicates that the link between Organizational Communication and work-related stress are negative.

H6: The standard coefficient -0.360 and p-value 0.000 indicate that organizational communication mediates the relationship between digital time management and work-related stress

H7: The coefficient -0.401 and the significance level was 0.000, therefore this hypothesis is accepted. organizational communication mediates the relationship between autonomy and work-related stress

Discussion

The results of the study provide valuable insights into the complex relationships between digital time management, autonomy, organizational communication, and work-related stress among university teachers. Each of the tested hypotheses offers significant implications for understanding how these variables interact in the academic work environment.

The strong negative relationship between digital time management and work-related stress (standard coefficient = -0.773, p-value = 0.000) indicates that university teachers who effectively use digital time management tools experience significantly

lower levels of stress. This finding aligns with existing literature (Adams et al., 2019) that highlights how digital tools can enhance organizational efficiency and reduce stress by enabling better task scheduling and prioritization. Teachers who manage their time efficiently using digital platforms can reduce the pressures associated with meeting deadlines, leading to an improved work-life balance. This result underscores the importance of adopting digital time management practices in academic settings to mitigate stress.

The positive relationship between digital time management and organizational communication (standard coefficient = 0.449, p-value = 0.000) demonstrates that teachers who employ digital time management strategies benefit from improved communication within their institutions. This could be since effective time management facilitates timely and clearer interactions between teachers and their colleagues or supervisors. Digital platforms, which enhance scheduling and information flow, contribute to an environment where organizational communication thrives. This finding aligns with prior research by Men (2014) that emphasizes how digital tools can enhance communication quality and reduce misunderstandings within organizations.

Contrary to expectations, the study found a negative and statistically significant relationship between autonomy and work-related stress (coefficient = -0.413, p-value = 0.000), rejecting the initial hypothesis. Although autonomy is generally viewed as a factor that reduces stress by giving teachers control over their work, the results suggest that in some cases, greater autonomy may increase stress. This might be due to the additional responsibility that comes with autonomy, especially when teachers are required to manage their work without adequate support or resources. These findings highlight the complexity of autonomy in academic settings, where too much responsibility without proper organizational structure can lead to stress (Spires & Davis-Cheshire, 2022).

The results confirm a significant positive relationship between autonomy and organizational communication (standard coefficient = 0.618, p-value = 0.000). Teachers with greater autonomy are likely to engage more actively in communication within their institutions, possibly because they have the freedom to contribute to decision-making processes and communicate their needs and perspectives more openly. This result suggests that fostering a sense of autonomy among teachers can improve communication flows, leading to a more collaborative work environment.

The strong negative relationship between organizational communication and work-related stress (coefficient = -0.845, p-value = 0.000) highlights the critical role that communication plays in reducing stress among university teachers. When organizational communication is clear, supportive, and well-structured, teachers are less likely to feel overwhelmed by their responsibilities, as they have access to the information and support they need to perform their tasks efficiently. This finding is consistent with studies by (Barwasser et al., 2022; Chen & Lim, 2022), which emphasize the importance of effective communication in reducing workplace stress.

The results indicate that organizational communication mediates the relationship between digital time management and work-related stress (coefficient = -0.360, p-value = 0.000). This suggests that digital time management alone may not be sufficient to reduce stress unless supported by strong communication practices. Organizational communication helps bridge gaps, ensuring that teachers can use digital tools effectively in a supportive environment, thus reducing stress. This mediating role highlights the importance of integrating both technological and communication strategies to create a stress-reducing work culture.

The study also found that organizational communication mediates the relationship between autonomy and work-related stress (coefficient = -0.401, p-value = 0.000). While autonomy may increase stress when teachers are left to manage tasks independently, organizational communication can mitigate this effect by providing guidance, feedback, and support. When communication is strong, the potential stress associated with autonomy can be reduced, making autonomy a more beneficial factor for teachers.

Conclusion

This study has provided a deeper understanding of the relationships between digital time management, autonomy, organizational communication, and work-related stress among university teachers. The findings highlight that while both digital time management and autonomy play significant roles in influencing stress levels, their effectiveness largely depends on the presence of supportive organizational communication. Strong communication practices not only reduce stress directly but also enhance the benefits of time management and autonomy. For university administrators, this underscores the need to invest in both digital tools for time management and robust communication strategies to create a supportive and stress-free work environment for teachers.

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