

Digital Administrative Communications Outside Official Working Hours and Job Burnout: The Mediating Role of Techno-Stress and the Moderating Role of Organizational Support

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Abstract

The purpose of this study was to examine the responses of the employees of Al-Musayyib Technical Institute/Al-Furat Al-Awsat Technical University on the effect of digital administrative communications outside working hours towards job burnout and the mediation role of technology stress variables and the moderating role of organizational support. Data collection was done by descriptive-analytical method with a total sample of 88 subjects. Linear regression and Process Macro analysis were conducted to analyze the data. Results indicated that the variables of digital administrative communications outside working hours and technology stress had a significant positive effect on the variable of job burnout, while technology stress had a positive effect on job burnout. The results also indicated that technology stress partially mediated the association between digital administrative communications outside of working hours and job burnout, but that organizational support did not moderate this relationship. The study suggests implementing organizational policies to reduce digital communications after work, increase organizational support, and decrease stressors of technology to reduce job burnout.

Keywords: *Digital Administrative Communication out of Working Hours; Job Burnout; Techno-Stress; Organization support; Al-Musayyib Technical Institute*

1. Introduction

Over the last 20 years, the working environment has seen radical changes with the fast growth of digital information and communication technologies, which have transformed the way organisations communicate and work. Email, instant messaging, virtual meetings and smart phones are now key in the management of organizational activities and in the coordination of daily activities. These technologies, useful as they have been in speeding up communication and increasing the efficiency of work, have also generated new problems due to the lack of barriers between work and personal life and also the maintenance of digital administrative communication outside of work hours (Santos et al., 2023).

Newly published research suggests digital communication between the administration and the public takes place outside of the usual working day and is increasing in many organisations, with employees being expected to look at emails or reply to work-related messages after hours. This continuous communication decreases their rest time, psychological and physical recuperation, and hinders work-life balance of employees (Kubo et al., 2021). Another study has revealed that constant professional pre-work communication can lead to a violation of work and personal life boundaries, exacerbating work-related stress and reducing employee well-being (Park & Jang, 2022).

The new digital world is characterized by change, and one of the biggest issues in modern organisations is job burnout. Job burnout is a feeling of being physically, mentally and emotionally drained as a consequence of prolonged contact with the stresses of a job. It is characterized by emotional exhaustion, lack of drive, and diminished job performance. Such an idea has attracted significant interest in the literature of organizational behavior and HRM, as it leads to negative outcomes, such as a decline in job performance, job satisfaction, and employee attrition and absenteeism (Angelini, 2023).

The variable of Techno-Stress has been a growing focus in understanding the link between the digital environment and job burnout. The psychological state experienced when using or adapting to information and communication technologies, characterized by a sense of exhaustion, complexity, overload and technological invasion in the private sphere (La Torre et al., 2019). Recent systematic reviews have corroborated the Techno-Stress with its enormous negative consequences, including emotional exhaustion, lower job satisfaction, impaired mental health, and reduced job performance (Kumar, 2024 and Alkhayyal & Bajaba, 2024).

Constant digital conversations that happen beyond the work day might be a big potential cause of digital stress, research indicates. It makes it hard for workers to disconnect and not respond to work pressures, which makes them feel like they have less control over their time and personal resources. Thus, digital stress can come to serve as an explanatory variable for the effects of digital communication beyond work hours on job burnout. Therefore, high exposure to digital communication outside working hours is likely to lead to a high level of digital stress that will in turn lead to a high risk of job burnout (Derks et al., 2014; Chiang et al., 2025).

In contrast, contemporary theories of organization, such as the theory of perceived organizational support focus on the importance of the employees' perception of the organization's care and concern, the recognition of their contribution, and provision of resources that are important for their job performance in reducing the harmful of occupational stress. Organizational support is considered as an essential organizational resource that allows employees to cope with work demands and adjust to the fast changing technology. Numerous studies have shown that a supportive work environment that provides a good work-life balance and enables employees to better adapt to the demands of modern technologies, can mitigate the impact of work-related stress and reduces the risk of burnout by providing high organizational support (Ali, 2026; Kurtessis et al., 2017).

Since the use of communications outside of official working hours has increased in the field of Iraqi higher education institutions, especially in Musayyib Technical Institute/Al-Furat Al-Awsat Technical University, this study hopes to explore the effect of communications outside of official working hours on the phenomenon of job burnout among academic and administrative leaders. This is done on the basis of intervening variables (technological stress) and moderating variables (organizational support). The scientific value of the research is that they offer an explanatory model that will integrate these variables in the context of higher education. This model helps to explain how digital communications can impact job burnout and provides useful metrics for higher education institutions to increase organizational support and reduce the adverse influence of digitalization on their employees.

2. Theoretical Framework and Hypotheses

Digital Administrative Communication Outside of Working Hours and Job Burnout

Recent literature in the field of organizational behavior shows that administrative communication outside of the workday has become an increasingly popular organizational phenomenon in the contemporary work environment, especially in organizations with high levels of reliance on digital technologies. This constant communication, through email, messaging applications and online platforms has increased the scope of work beyond the traditional limits and lessened opportunities for psychological disengagement from the job (Fenner & Renn, 2010). The work-resource theory has been used to explain that stressful factors such as increased work demands, including digital communication outside of working hours, deplete employees' psychological and mental capacities, which eventually results in a higher level of psychological and emotional exhaustion, one dimension of job burnout (Bakker & Demerouti, 2017). In this context, the non-disengagement from the workplace and the greater time and cognitive pressure of being constantly receiving information from professional messages and instructions outside of working hours, raises the chances of employee burnout. Research has also shown that e-communication during non-working hours can also cause the work-life balance to blur, intensify work-life conflict and reduce opportunities for psychological recovery. This has a direct connection with a higher level of job burnout (Sonnentag & Fritz, 2015). The nature of ongoing communication and the expectation of instant reactions are therefore a source of chronic work-related stress which adversely affects mental well-being and job satisfaction. Given all of the above, it is possible to explain the relationship between digital administrative communication outside of the working hours of the job and job burnout in such a way that it is a stressor that increases the psychological and temporal requirements of the job, thereby depleting individual resources and increasing the level of job burnout. So the hypothesis is as follows:

H1: The effect of communication in the administration of the Musayyib Technical Institute outside the time of working on job burnout is statistically significant positive.

Digital Administrative Communication Outside of Working Hours and Techno-Stress

The digital form of administrative communication after working hours and Techno-Stress are correlated based on scientific literature by stating that in the era of digital communication means such as email, messaging applications and online work platforms, the employees are constantly exposed to technologies that lead to an increase in technological stress. This fosters an attitude of being "on call" and available to handle work-related communications and needs, even outside of official working hours. This results in fewer chances for relaxation or psychological recovery, diminishes capacity to mentally "unplug" and leads to a greater blurring of role boundaries. This relationship can be understood from the perspective of the resource conservation theory, which suggests that stress occurs when there is a lack of resources in terms of psychological and/or temporal resources without opportunity to recuperate. When the administrator is continually communicating outside of the workday, it is a drain on those resources and raises the risk of technostress. This has been corroborated by the results of previous studies. This was the same finding in Fenner & Renn (2010) that availability of the digital for work outside work hours correlates with higher stress levels of employees. Tarafdar et al. (2019) similarly reported that digital stress is directly related to the extent of digital communication and the expectation for immediate response to work-related messages, because of the sense of being overwhelmed by technology and the challenge of work-life balance. In this context, Mellner (2016) study showed that for working outside of office hours in this context, the continuous availability is related to psychological stress and difficulty in recovering from work strain – both are aspects of digital stress. Schlachter et al. (2018) recorded that work-related digital communication after hours negatively impacts the emotional exhaustion and work-

life balance because of the continued use of technology outside of work hours. In addition, Kim et al. (2012) revealed that the abuse of work-related communication tools outside working hours is linked to the heightened anxiety and psychological stress of employees, thereby indicating the negative impact of the continuous use of digital work-related communication tools on psychological stress. In a similar study, Reinke & Gerlach (2022) demonstrated that having the expectation of reply to professional messages during off-work hours is linked to higher psychological stress and lower overall employee well-being. This indicates that digital administrative communication beyond working hours can lead to higher technical stressors and therefore more technical stress, because there is a constant technical and psychological pressure outside of working hours. From the theoretical literature and previous studies the following hypothesis can be formulated:

H2: The relationship between digital administrative communication out of office hours and technical stress of the Musayyib Technical Institute employees is statistically significant positive relationship.

Techno-Stress and Job Burnout

Literatures in the field of organizational behavior and information systems show that Techno-Stress is one of the new issues in the field that has a significant impact on employee mental health. It is caused by the requirements of digital technologies in the workplace, as well as the overload of information, the pressure of fast turnaround and the merging work-life and personal life. This can cause a psychological and cognitive burnout. On the other hand, one of the continuing adverse effects of occupational stress is the phenomenon of job burnout which results in emotional exhaustion, emotional numbness and a decrease in sense of accomplishment (Tarafdar et al., 2011; Ayyagari et al., 2011). A positive correlation between the two variables has been confirmed by several studies. Ragu-Nathan et al. (2008) demonstrated that there is a direct correlation between information systems stress and reduction in job satisfaction and burnout. Likewise, Hessari et al. (2023) found that technological stressors including greater digital workload and technology intruding into employees' personal lives were positively associated with employee burnout. This is also backed by a study by Atrian & Ghobbeh (2023) that revealed that technological interference in the workplace increases the psychological exhaustion and stress. In addition, Fugleth & Sørøbø (2014) discovered a negative relationship between stress from information systems use and psychological wellbeing and an increase in job burnout. Lastly, a study by Wang, et al. (2008) about digital work, concluded that Techno-Stress was one of the most significant factors affecting employee burnout in a technological setting. From the above, the hypothesis of the study may be stated as follows:

H3: There is a statistically significant positive relationship between technical stress and job burning out among employees at the Musayyib technical institute, in which higher the technical stress higher the job burning out.

Organizational Support and Job Burnout

Organizational support is a very important organizational factor that can help promoting employees' mental health and reducing negative effects of work related stress. Organizational support theory is the foundation for the relationship between organizational support and job burnout and suggests that employees develop perceptions of how much the organization values their work and how much care the organization takes of them. They have a positive perception that affects their professional attitudes and behaviors, which in turn decreases their risk of burnout (Rhoades & Eisenberger, 2002). This relationship is also explained by the resource conservation theory, which views organizational support as an important resource that enables employees to manage occupational stress and work demands, which in turn reduces the depletion of employees' psychological or emotional resources and helps to minimize

experiences of exhaustion or professional fatigue. A meta-analysis by Kurtessis et al. (2017) showed that organizational support is positively related to psychological well-being and job satisfaction, and negatively related to measures of stress and job burnout in this context. In a practical sense, a study of the relationship between perceived organizational support and job burnout among employees in the hospitality industry by Walters & Raybould (2007) found that there is a statistically significant negative correlation. The more the organization supported, the less emotional exhaustion and emotional detachment experienced by employees. In line, Alcover et al. (2018) revealed that organizational support has a protective effect on decreasing job burnout and enhancing job satisfaction among workers, thus supporting the role of organizational support in reducing occupational stress. Similarly, another study by Wang & Wang (2020) demonstrated that organizational support is a key factor in reducing job burnout among frontline employees as well as increasing organizational commitment and decreasing their intention to leave. All of these suggest that support in the organizational environment is one of the most crucial elements of which organizations can avail themselves to prevent job burnout and enhance employee performance and psychological well-being. In the light of the former theoretical work and application, we propose:

H4: There is a statistically significant negative relationship between organizational support and job burnout and that a high level of organizational support is related to lower level of job burnout among the employees in Musayyib Technical Institute..

Organizational Support and Techno-Stress

Organizational supports are essential organizational factors that help to reduce the adverse impact of the technological stress. It is an indication of how employees perceive the company's commitment to their welfare, understanding of their value and support of them in fulfilling their responsibilities. Social exchange theory is used as the foundation for the relationship between these two variables; according to this theory, the provision of material, moral and technological supports by the organization minimizes the pressures that occur due to the use of modern technologies and rapid changes in the digital world and increases employees' sense of security and confidence in this context. Techno-Stress is the feeling of a person that they are unable to cope with the technological expectations or that they are exposed to growing technological expectations that cause anxiety, exhaustion and reduced performance. Solís et al. (2023) reported significant negative correlation between perceived organizational support and Techno-Stress at the three components as well as at the overall level of Techno-Stress among teachers, meaning that the higher the perceived organizational support, the lower the Techno-Stress and its components. In addition, Wang & Shu (2008) conducted a study that showed that organizational support acts as a modulatory variable, which can weaken the effects of Techno-Stress when it comes to job-related pressures, and thus institutional support can be considered as a kind of effective mechanism to reduce the negative effects of technology in the workplace. Likewise, Rahmah et al. (2025) revealed that organizational support negatively influences the level of Techno-Stress both directly and through fostering technology acceptance among government employees. According to the study of Widiyati and Wibawa (2026), organizational support plays a role in mitigating the impact of Techno-Stress in higher education institutions and improving employee engagement in their jobs. Lastly, Ward and Harunavamwe (2025) found that organizational support is an important organizational resource that buffers the effect of Techno-Stress on work-life balance, which in turn promotes employee well-being and adjusting to the demands of digital work. Based on the above discussion, it can be ascertained that organizational support is among the most essential preventative factors that allows employees to adapt with the challenges of the modern technology, to minimize the Techno-Stress and to enhance the employees performance and job well-being. Drawing from the theoretical context and studies that supported the relationship between organizational support and technical stress, we suggest:

H5: The perceived level of organizational support has a significant negative correlation with the level of technical stress of the employees at the Musayyib Technical Institute such that the higher the perception of organizational support, the lower the level of technical stress.

Digital Administrative Communication Outside of Working Hours and Job Burnout: The Mediating Role of Techno-Stress

According to the theoretical literature, one of the aspects of the digital transformation in work environments is the digital administrative communication outside the working hours. Email and IM applications have grown the envelope of work beyond the bounds of traditional timeframes, creating a sense of expectation for immediate response, and a blurring of work and personal life. This has led to greater psychological stress and tech burnout amongst workers. Jett & George (2003) and Mazmanian et al. (2013) have found digital communication beyond working hours to be a reinforcing mechanism of 'constant engagement with work' and to cause cognitive interruptions and mental fatigue. Becker et al., (2018) showed that messages during off times lead to work accumulation and stress. Gadeyne et al. (2017) verified that high out-of-work use of communication technology is directly related to tech burnout and psychological recovery problems. Fischer & Riedl (2017) explained that this tech burnout is: A key explanatory mechanism is that the demands of technology leads to a depletion of the psychological resources of the individual, which over time may lead to job burnout, which is a state of emotional exhaustion, apathy and reduced performance. So, there is not a direct link between digital communication outside of working hours and job burnout, there is a factor in between: technological stress. This stress serves as a connecting explanatory variable, and accentuates the effect of such communication on the dwindling psychological and mental energy of employees. This is backed by the emergence of congruent results from previous studies, all of which revealed a hierarchical link from the digital administrative communication following official working hours to the Techno-Stress and finally to job burnout. Accordingly, we propose:

H6: Techno-Stress is the mediator between the relationship between digital administrative communication outside of working hours and job burnout. There is a positive relationship between the study variables of increased digital communication outside of working hours and Techno-Stress among the employees of Musayyib Technical Institute, which in turn positively affects their job burnout.

Digital Administrative Communication Outside of Working Hours and Job Burnout: The Interactive Role of Organizational Support

New materials indicate that out-of-work hours (OWOH) communication, such as emails, work applications and professional calls, are an extra job requirement that require constant availability and readiness from employees. This can result in in distinguishability between work and leisure, lack of opportunity for psychological recovery and relaxation, and can add to the exhaustion of psychological and emotional resources and job burnout. Both resource conservation theory and the job requirements and resources model support this relationship, as work-related communication that takes place outside of working hours can be regarded as a working requirement that drains individual resources over time (Baumeister et al., 2021; Wang et al., 2022). Studies by Santuzzi & Barber (2018) showed that expecting to respond to e-mail outside of working hours is correlated with greater emotional exhaustion because psychological disconnect from the job is hampered. Vaziri et al. (2020) studied the effects of using work-related communication technologies outside work hours on psychological exhaustion and job well-being and concluded that intensive use of such devices outside of work time results in psychological exhaustion and reduced job well-being. The findings showed how digital technologies are increasingly blurring the boundaries between work and personal life, causing stress and burnout. On the other hand, according to the organizational support theory, employees' perception of an organization's caring about their welfare

and appreciating their contribution is an important organizational resource that can buffer the negative impact of job stress. As Caesens et al. (2017) stipulated that perceived organizational support leads to a decrease in burnout levels, because it gives a sense of security and psychological resources. In a similar study, Han et al (2016) found that perceived organizational support buffers the effect of occupational stress on burnout by fostering psychological and social resources in employees which can help them cope with work stress and therefore decrease emotional exhaustion.

H7: Organizational support is an interactive effect in the relationship between digital administrative communications outside of official working hours and job burnout of the employee in the Musayyib Technical Institute and the positive effect of digital administrative communications outside of official working hours on job burnout is less when organizational support is high, and greater when organizational support is low.

Digital Administrative Communication Outside of Working Hours and Techno-Stress: The Interactive Role of Organizational Support

Digital administrative communication after working hours is a job requirement which is a new way of keeping employees constantly connected to the work environment, giving them access to monitor emails, professional calls, work related digital applications, etc. This causes greater cognitive and psychological loads due to technology use. Based on job requirements and resource conservation theories, prolonged exposure to these demands leads to exhaustion of an individual's personal resources, erodes chances for psychological recovery after work, and thereby increases the risk of the occurrence of technological stress. A few studies have shown that the norm of always being 'on' with regards to work-related digital messages after working hours is correlated with increased stress, psychological fatigue and worse work-life balance. They are some of the most noticeable forms of technological stress, and the feeling of exhaustion and tension of employees grows as the need for continuous communication with digital technology outside working hours increases (Barber & Santuzzi, 2015; Park et al., 2011; Day et al., 2012). Professional use of communication technologies outside working hours adds work load and pressure to the employees. Xie et al. (2018) found that digital communication at work after hours is related to emotional exhaustion, and Santos et al. (2023), by conducting a systematic review and meta-analysis, found that information and communication technologies used for work after hours is negatively related to work-life balance and contributes to greater psychological stress levels. Perceived organizational support, on the other hand, is an employee's recognition of the organization's concern for him/her and the availability of the resources and support that he/she needs. This can reduce the negative impacts of digital stress. The literature supports the fact that organizational support can serve as a functional resource to mitigate the effects of Techno-Stress on employees and increase their ability to adapt to the demands of digital work (Khalequzzaman et al., 2025). We propose that, on the basis of the theory of the interactional relationship, we should:

H8: Perceived organizational support is a moderating variable between digital administrative communication outside of official working hours and Techno-Stress, the positive relationship between digital administrative communication outside of official working hours and technical stress will be weakened when the level of perceived organizational support is high than when the level of perceived organizational support is low among employees at the Musayyib Technical Institute.

The paths of direct influence between variables, mediating and interactive influences can be depicted by the hypothetical model of the study as in Figure 1.

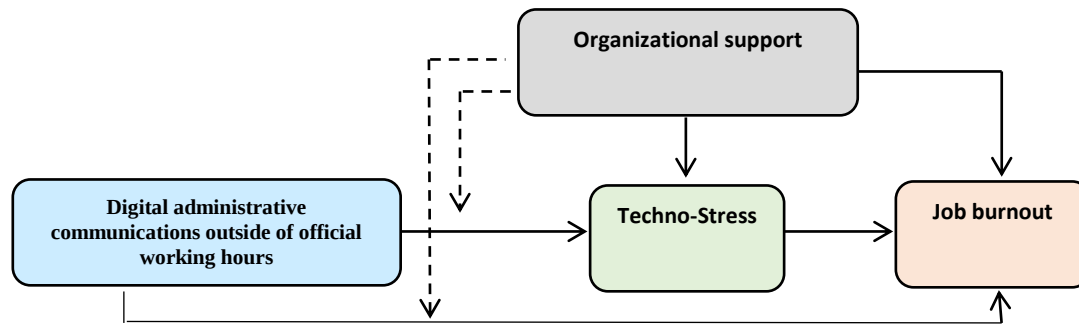


Figure 1: The hypothetical model of the study

3. Methodology

Participants and Study Procedures

Based on the nature of the relationship between the variables in the study, that is digital administrative communication outside of working hours, technical stress, job burnout, and perceived organizational support, the study was conducted using descriptive-analytical approach which was considered suitable in examining the relationships directly and indirectly. The study population was employees in the higher education institutions in Iraq while the study sample included the employees of the Musayyib Technical Institute. The sample consisted of heads of academic departments and their assistants, division and unit heads, as well as liaison officers whose work depends on the use of digital communication tools to accomplish tasks and for professional communication. To achieve the objectives of the study, the sample was determined by purposive sampling which was found suitable for the nature of the study and the group exposed the most to communication through digital media in the administration outside of official working hours. To collect data, an electronic questionnaire was used as a primary research instrument after getting approvals from the Dean of the Musayyib Technical Institute. The link for the questionnaire was then shared on official digital groups in the institute. The data collection was carried out from June 2026, and finally (88) valid questionnaires were obtained for statistical analysis. The samples were equally distributed based on sex, males 53.4% and female 46.6%. It also included those who occupied various job levels including unit heads (34.1%), liaison officers (26.1%), heads of academic departments (14.8%), academic department coordinators (13.6%) and division heads (11.4%). In terms of years of experience in their current position, the largest group (36.4%) had between 5 and 10 years of experience, followed by those with more than 15 years (31.8%), then those with less than 5 years (21.6%), and finally those with 11 to 15 years of experience (10.2%). The majority of the sample was master's degree holders (48.9%), followed by bachelor's degree holders (22.7%), doctorate holders (19.3%) and technical diploma holders (9.1%). The diversity of the demographic characteristics indicates that it is an adequate representation of the study population which lends the results to the generalizability of the findings to the target population.

Measurements

Four major instruments were used to measure the variables in the study. All measures were tailored to the content of the study and the nature of the study population of employees in the higher education institutions in Iraq. The items were translated into the local language if needed, and adjusted for clarity and consistency with the local work environment. In addition to this, a five-point Likert scale was used to determine the responses of the participants with answers options ranging between strongly disagree (1) and strongly agree (5) for all the variables of the study.

Digital Administrative Communications Out Of Hours (ODAC). The scale developed by Barber & Santuzzi (2015) was used to assess employees' awareness of the need to promptly respond to digital administrative communications outside working hours. The scale was composed of eight factors such as: "I am concerned with the speed of response to digital administrative communications outside of working hours. In the present study, the internal consistency coefficient (Cronbach's Alpha) of this scale was 0.837, which is regarded as a good level of reliability.

Techno-Stress (TS). The scale adopted for the study to assess the sources of Techno-Stress was developed by Ragu-Nathan et al. (2008). This scale measures employees' perception of technology as a source of pressure and burden related to work, even though digital tools of administrative communication continue to be used outside of working hours. Scale comprises of 20 items, such as: "Technology makes me work more quickly than I would normally. In the present study, the internal consistency coefficient (Cronbach's Alpha) of this scale was 0.824, indicating a high level of internal consistency and thus the suitability of this scale for this research.

Job Burnout (JB). The Copenhagen Burnout Inventory (CBOI) by Kristensen et al., (2005) was employed to assess the extent to which job burnout employees experience physical and psychological exhaustion. The scale was composed of 12 items such as: "I feel physically and psychologically exhausted because of the fact that I am continuously involved in work demands outside of the official working time. In this study, the Cronbach's Alpha coefficient of this scale was 0.834, indicating high internal consistency and suitability for use in this study.

Organizational Support (OS): The study used the Organizational Support Scale which is based on the concept of organizational support theory proposed by Eisenberger et al. (1986). It has been adapted to the context of the digital administrative communications outside of regular working hours, and the suitability of its items has been enhanced by taking reference from relevant recent literature, to make it more suitable to the current study context. There were eight items on the scale, such as: "The organization gives me the resources I need to manage the demands of digital work". The internal consistency coefficient of this scale in this study was 0.886 and had high internal consistency and is suitable for use in this study.

4. Results and Analysis

The instrument validity and reliability were checked and there were no statistical problems that would affect the results of the analysis, so that the study was continued to test the hypotheses which had been formulated based on the formulated conceptual model. Descriptive statistics, characteristics of the data distribution and correlation coefficients between the study variables were presented as the starting point of the analysis. This was followed by the hypotheses testing of direct effect and indirect effect of the technical stress as a mediator, and the hypotheses testing of organizational support as a moderation variable using the regression analysis and PROCESS macro.

Table 1. Descriptive Statistics and Correlations

Variables	Mean	SD	Skew	Kurt	1	2	3	4
1 ODAC	3.935	0.588	-1.074	1.337	1.000			
2 TS	3.989	0.511	-1.677	5.083	0.708**	1.000		
3 JB	3.956	0.453	-0.883	1.503	0.688**	0.796**	1.000	
4 OS	2.716	0.848	0.310	-0.884	-0.528**	-0.399**	-0.417**	1.000

**significance of the correlation coefficient at the (0.01) level.

Descriptive statistics, distribution shape indicators and correlation coefficients between the study variables are shown in the following Table (1). The results show that the digital administrative communication outside of official working hours, technical stress and job burnout were measured at a high level and the organizational support was measured at a low level in comparison with the other

variables measured in the study. In addition, the skewness and kurtosis values revealed that there was no severe violation of the distribution shape of the study variables, with the values falling in the range advised by Kline (2016). This indicates that the data is fairly normal and acceptable for further statistical analysis. As for the correlation coefficients, it was seen that there were strong and significant positive correlations between digital administrative communication outside of the working hours and both technical stress and job burnout and technical stress and job burnout. On the other hand, notable negative correlation was found between organizational support and the use of digital administrative communication outside of the office hours, technical stress, and job burnout, which gave initial support for the conceptual model of study and paved the way for testing the direct effect, indirect effect and moderating effect hypotheses through regression models and PROCESS Macro analysis.

Table 2. Testing the direct effects hypotheses

Hypothesis	R ²	F	Beta	t	Sig
H1	0.501	86.497	0.708	9.300	0.000
H2	0.474	77.380	0.688	8.797	0.000
H3	0.634	148.979	0.796	12.206	0.000
H4	0.159	16.272	-0.399	-4.034	0.000
H5	0.174	18.138	-0.417	-4.259	0.000

Table (2) shows the results of testing the direct effect hypotheses between the study variables using simple linear regression analysis. The results indicate that digital administrative communications outside of official working hours have a positive and significant effect on both job burnout and technical stress. Similarly, the results show a positive and significant effect of technical stress on job burnout, thus supporting the study hypotheses regarding the direct relationships between these variables. Conversely, the results demonstrate that organizational support has a negative and significant effect on both job burnout and technical stress, reflecting its role in mitigating their negative effects within the work environment. Consequently, all direct effect hypotheses (H1–H5) received statistical support, providing a suitable basis for moving on to testing the indirect effect of technical stress as a mediating variable, as well as testing the moderating role of organizational support using PROCESS macro analysis.

Table (3): Results of estimating the mediation model paths using PROCESS Macro

Path	B	SE	t	P
ODAC → TS (path a)	0.530	0.060	8.797	<0.001
TS → JB (path b)	0.662	0.090	6.969	<0.001
ODAC → JB (path 'c)	0.264	0.070	3.613	<0.001

Table (4): Results of the indirect impact test using Bootstrap

Type of effect	Effect	BootSE	BootLLCI	BootULCI
Indirect impact via technical stress	0.351	0.107	0.160	0.579

The results of mediation analysis using PROCESS Macro showed a significant positive effect of digital administrative communication outside of working hours on technical stress (B= 0.530, SE= 0.060, t= 8.797, p < 0.001). Similarly, technical stress was found to have a significant positive effect on job burnout (B= 0.662, SE= 0.090, t= 6.969, p < 0.001). Furthermore, the direct effect of digital administrative communication outside of working hours on job burnout remained significant even after introducing technical stress as a mediating variable (B= 0.264, SE= 0.070, t= 3.613, p < 0.001). The Bootstrap results showed an indirect effect of 0.351, and a 95% confidence interval between 0.160 and 0.579 (excluding zero), indicating the significance of the indirect effect. These results suggest that technical stress plays a partial mediating role in the relationship between digital off-duty administrative communications and job burnout, thus supporting the sixth hypothesis.

Table 5. Results of the interactive impact test of organizational support on the relationship between digital administrative communications outside of working hours and job burnout.

First: Regression Model Summary					
R	R ²	F	df1	df2	Sig
0.709	0.502	28.258	3	84	<0.001
Second: Results of the Interactive Impact Test					
variable	B	SE	t	P	
ODAC	0.5996	0.0942	6.3668	<0.001	
OS	-0.0207	0.0559	-0.3707	0.7118	
Interactive limit (ODAC * OS)	-0.000005	0.0751	-0.0001	0.9999	

The results of the interaction regression analysis using PROCESS Macro (Model 1) showed that the statistical model was statistically significant overall, with a multiple correlation coefficient ($R = 0.709$) and a coefficient of determination ($R^2 = 0.502$). This indicates that the interaction model consisting of digital administrative communications outside of official working hours, organizational support, and the interaction threshold between them explains 50.2% of the variance in job burnout. The F-test value also confirmed the overall significance of the model at a significance level of less than 0.001. At the regression coefficient level, digital administrative communications outside of official working hours were found to have a positive and significant effect on job burnout ($B = 0.5996$, $p < 0.001$), while organizational support did not show a direct and significant effect on job burnout ($p = 0.7118$). The interaction threshold between digital administrative communications outside of official working hours and organizational support was not statistically significant ($B = -0.000005$, $t = -0.0001$, $p = 0.9999$), which indicates that organizational support did not change the strength or direction of the effect of digital administrative communications outside of official working hours on job burnout. Therefore, there is no statistical evidence to support the interactive role of organizational support, and thus the seventh hypothesis is rejected.

Table 6. Results of the interactive effect test of organizational support on the relationship between digital administrative communications outside of working hours and technical stress.

First: Regression Model Summary					
R	R ²	F	df1	df2	Sig
0.694	0.481	25.988	3	84	<0.001
Second: Results of the Interactive Impact Test					
variable	B	SE	t	P	
ODAC	0.5364	0.0853	6.2908	<0.001	
OS	-0.0315	0.0506	-0.6233	0.5348	
Interactive limit (ODAC * OS)	-0.052874	0.0680	-0.7774	0.4391	

The results of the interaction regression analysis using PROCESS Macro (Model 1) showed that the overall model was statistically significant, with a correlation coefficient ($R = 0.694$) and a coefficient of determination ($R^2 = 0.481$). This indicates that digital administrative communications outside of official working hours, organizational support, and the interaction between them explain 48.1% of the variance in technical stress. The F-value ($F = 25.988$) was less than 0.001, indicating the overall significance of the model. At the regression coefficient level, digital administrative communications outside of official working hours had a positive and significant effect on technical stress ($B = 0.5364$, $p < 0.001$), while organizational support did not show a direct and significant effect on technical stress ($B = -0.0315$, $p = 0.5348$). The interaction between digital administrative communications outside of official working hours and organizational support was not statistically significant ($B = -0.0529$, $p = 0.4391$), indicating that organizational support did not change the strength or direction of the relationship between digital administrative communications outside of working hours and technical stress, and accordingly the eighth hypothesis is rejected.

5. Discussion

The results of the research showed that there was a direct effect that was statistically significant between the variables in the study. There is a positive relationship between Digital Administrative Communication at non-work hours and Job Burnout and between Technical Stress and Job Burnout. Organizational support, on the other hand, has a negative effect on job burnout and technical stress. The consequences of these results are as follows: Today's work requires digital administrative interaction outside of the working hours, which requires employees to be available and responsive at any time. This depletes their psychological and temporal resources, and raises technical stress and job burnout. On the other hand, organizational support helps to provide psychological and organizational resources that enable employees to deal with pressure and adjust to the demands of the digital environment. These findings are consistent with those of studies (Fenner & Renn, 2010; Tarafdar et al., 2019; Mellner, 2016; Schlachter et al., 2018; Kim et al., 2012; Reinke & Gerlach, 2022) regarding the effects of digital communication outside of work hours on increased stress and burnout. They also support the results of Ragu-Nathan et al., (2008), Hessari et al., (2023), Atrian & Ghobbeh, (2023), Fuglseth & Sørebo, (2014) and Wang et al., (2008) which showed that Techno-Stress is positively associated with job burnout. Moreover, they corroborate the results of (Kurtessis et al., 2017; Walters & Raybould, 2007; Alcover et al., 2018; Wang & Wang). The results of previous studies (2020; Rahmah et al., 2025; Widyawati & Wibawa, 2026; Ward & Harunavamwe, 2025) indicate that organizational support has an effect in decreasing job burnout and technical stress.

The results of the research showed that Techno-Stress had a significant mediating effect between digital administrative communication outside of working hours and job burnout. This validates that the influence of digital administrative communication does not directly transfer to job burnout, but through Techno-Stress as an explanatory variable between digital administrative communication and job burnout. This finding can be accounted for in the sense that the constant administrative communication after working hours, creates more technical pressures and the need for constant response, which drains the psychological and cognitive resources of employee, making them more prone to job burnout. This is in line with the studies of Jett & George (2003), Mazmanian et al. (2013), Becker et al. (2018) and Gadeyne et al. (2017) and in line with the results of the Fischer & Riedl (2017) study which showed that Techno-Stress is the explanatory link through which the effects of technology demands are transmitted to job burnout. This is in support of the conceptual model of the current study.

The results of the research did not reveal a statistically significant interaction of organizational support on the relationship between digital administrative communication outside of work time and job burnout and technological stress. This would indicate that the organizational support didn't help to change the effect of this communication on these two variables. This is because digital use for administrative communication outside working hours is a constant requirement of the job that constantly places psychological and cognitive demands on employees, sometimes beyond the level of organizational support that can be offered. This result is contrary to other studies (Caesens et al., 2017; Han et al., 2016; Khalequzzaman et al., 2025) that highlighted the stress reduction effects of organizational support in mitigating job and technological stress. This discrepancy may be due to the type of stressors and the organizational context of the sample used. This outcome suggests that organizational support could play a direct role in decreasing job burnout and technical stress; however, this does not necessarily mean that it could modify the relationship between digital administrative communications outside of official work hours with job burnout and technical stress, as this study results illustrated the difference between the direct effect supported by the study results and the interactive effect that did not receive statistical support.

6. Conclusions

From the study results it was revealed that digital administrative communication outside of working hours is one of the factors that have a significant impact on the work environment and this impact led to the rise of job burnout and technical stress among employees at Musayyib Technical Institute. The results also indicated that technical stress is a major outcome of continued digital communications outside of working hours, and that its high levels directly translate to increased job burnout, thus confirming a causal relationship between the study variables.

Moreover, the study found that organizational support directly affects job burnout and technical stress, highlighting the need to provide organizational resources and supports for employees to create a positive working environment and mitigate negative effects associated with the use of digital technologies. The results further showed that the relationship between digital administrative communications after working hours and job burnout is mediated by technical stress, which means that a part of the effect of digital administrative communications goes through the technical stresses caused by them among employees.

On the other hand, there was no evidence to suggest an interaction between digital administrative communication outside working hours with job burnout and technical stress. This indicates that the effect of organizational support was only direct and not indirect, in that it did not influence the effect between these variables. This stands to point out that it is necessary to tackle the root causes of digital administrative communications to mitigate the adverse impacts, alongside increasing organizational support as a factor that helps improve employee well-being, although it isn't enough on its own to alter the impact of the digital communications.

7. Recommendations

Based on the results of the study, the study recommends formulating a clear regulatory policy regarding digital communication in administration outside of working time. This policy should reduce such communications to essential and emergency situations and help to improve a work-life balance whilst minimizing the adverse consequences of ongoing work communications outside of working times.

The study also calls for further investment in initiatives that would help lower employee stress levels, via training initiatives that would build skill sets on the use of digital technologies, time management and coping with digital stress. Moreover, it suggests the redistribution of the job responsibility in accordance with the available human and technological resources.

The study also proposes that support for employees should be continued both material and moral; and the practices of organizational support should be improved by creating a work environment of trust, appreciation and fairness. This directly affects the reduction of burnout and Digital Stress. It should be noted, however, that the positive impact of organizational support on the negative impact of digital administrative communications outside of working hours is limited when there is no effective management of the sources of these pressures.

The paper suggests that the organizational policies in educational institutions need to take into account the human and psychological well-being of staff members during the process of digital transformation. This would ensure a balance between the needs of digital competence and maintaining employee welfare and mental health, and guaranteeing the sustainability of the institutional performance without reducing the quality of work life.

The study also suggests future researchers try testing other factors that might mediate or modify the link between digital administrative communications outside of official working hours and job burnout. These are: psychological detachment from work, psychological resilience, coping strategies, mindfulness, work-life balance, job autonomy, job load, emotional intelligence, organizational culture and supportive leadership. This will help deepen understanding of the mechanisms that explain or modify the impact of digital administrative communications outside of official working hours and on employee outcomes.

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