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Digital Distractions: Can technostress and boss phubbing impact teachers' performance?

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Abstract
The rapid growth in information technology has reshaped education, increasing teachers' responsibilities and potentially leading to Technostress, which impacts job performance through psychological, physical, and emotional strain. Notably, early retirements due to stress rose from 2,777 in 2015 to over 10,000 in 2022. This research examines the link between Technostress and job performance among rural teachers in Segamat, Johor, and explores the effect of boss phubbing. Utilizing a quantitative approach and a sample of 251 teachers, the study, based on the Transactional Theory of Stress, reveals that Techno-Overload and Techno-Complexity affect job performance. However, boss phubbing does not moderate this relationship.

Keywords: Technostress; Boss Phubbing; Job performance; Teachers

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1.0 Introduction

Technostress is a form of psychological strain that arises from an individual's struggle to cope with the rapid development and use of information and communication technologies (ICT) in the workplace (Pflugner et al., 2021). As digital tools become increasingly integrated into daily work routines, many individuals, particularly in professional environments such as schools, struggle to adapt to these changes, resulting in adverse psychological outcomes. In educational settings, particularly in schools, teachers are often required to work independently to meet organizational goals. School administrators recognize that highly motivated and dedicated teachers are essential for driving educational success. Teachers' performance and commitment have been empirically linked to positive outcomes, including school effectiveness, job satisfaction, retention, the ability to integrate new teaching practices, and overall educational progress (Majid et al., 2019). Conversely, student achievement, engagement, and attitudes toward learning are all influenced by teacher dedication.

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However, many teachers are not adequately trained to use ICT tools effectively, which can cause them to experience. Technostress. For example, a study by Othman and Sivasubramaniam (2019) found that 84.6% of 356 teachers surveyed in Klang, Malaysia, reported experiencing depression and stress related to the use of technology in their teaching duties. In addition, the National Union of the Teaching Profession (NUTP) highlighted that many teachers are burdened by non-teaching administrative tasks required through digital platforms. Applications such as e-Kedatangan and e-Disiplin, which require teachers to enter data daily, add to their workload and detract from actual teaching time (New Straits Times, 2018).

Another emerging workplace issue is boss phubbing, a situation in which a boss ignores employees in favor of engaging with their smartphones. While most studies on phubbing have focused on romantic or social relationships (Balta et al., 2018; Wang et al., 2017), a limited but growing body of research suggests that boss phubbing can also damage workplace relationships and negatively impact employee performance and morale (Al-Saggaf & O'Donnell, 2019). When individuals feel ignored or excluded, their fundamental psychological needs, such as acceptance, self-worth, control, and a sense of purpose, can be threatened (Gerber & Wheeler, 2009). Given the increasing reliance on technology in schools and the influence of interpersonal dynamics, such as boss phubbing, it is essential to examine how these factors impact teacher performance. Therefore, the objectives of this study are to investigate the relationship between Technostress and job performance among primary and secondary public school teachers in Segamat, and to examine the moderating effect of boss phubbing on the relationship between Technostress and job performance among rural primary and secondary public school teachers in Segamat.

2.0 Literature Review

Teachers today face higher stress from using new technology, especially in rural schools. This Technostress affects their job satisfaction and performance (Wang et al., 2023; Lee & Ahmad, 2022). It happens when teachers feel overloaded or confused by technology (Tarafdar et al., 2015). Another issue is boss phubbing when a leader uses their phone and ignores staff. This hurts communication and workplace trust (Kucuk & Ceylan, 2023; Suzer & Koc, 2022). Teacher job performance, crucial for educational success, is affected by both Technostress and weak workplace communication. This study addresses the gap by examining these variables together.

2.0.1 Technostress

Technostress is a stress phenomenon linked to the use of information and communication technology (ICT) and has been described as a modern adaptation challenge. It arises from the complexities and demands of new technologies, including Techno-overload and Techno-complexity (Tarafdar et al., 2015). Techno-overload refers to the increased workload resulting from using multiple applications, while techno-complexity relates to the difficulties in mastering new technologies (Ragu-Nathan et al., 2008). Recent studies have highlighted the impact of technostress on educators. For instance, a study found that technostress adversely affects teachers' quality of work life and job performance, particularly when schools are slow to adapt to new technologies (Saleem & Malik, 2023).

2.0.2 Boss Phubbing

Boss phubbing refers to the distraction caused by a manager's use of their smartphone during interactions with employees. This phenomenon has been widely studied in the context of personal relationships but is less explored in the workplace (Nihal & Duman, 2021; Suzer & Koc, 2021). Phubbing can lead to feelings of exclusion and negatively impact professional relationships (Gerber & Wheeler, 2009; Roberts & David, 2019).

2.0.3 Job Performance

Job performance is crucial for organizational success and is influenced by various factors, including Technostress. Effective job performance entails fulfilling role requirements and contributing to the organization's goals. For teachers, high performance translates to better job satisfaction, dedication, and effectiveness in achieving educational goals (Tevfik & Guven, 2017). A review of existing studies emphasized that factors such as technological competence, organizational support, and technostress significantly impact teacher performance (Nadifa et al., 2024).

2.1 Theoretical Framework

The study is grounded in the Transactional Theory of Stress (TTS), which posits that stress arises when perceived demands (e.g, bad leadership, boss phubbing) exceed available resources (Tarafdar et al., 2015). Demands, sometimes referred to as stressors, and resources are components that help people deal with or cope with stressful situations. Technostress also occurs when there is a mismatch between an individual's skills and the technological support provided by their environment (Abilleira et al., 2020). This framework helps to understand how technostress affects job performance.

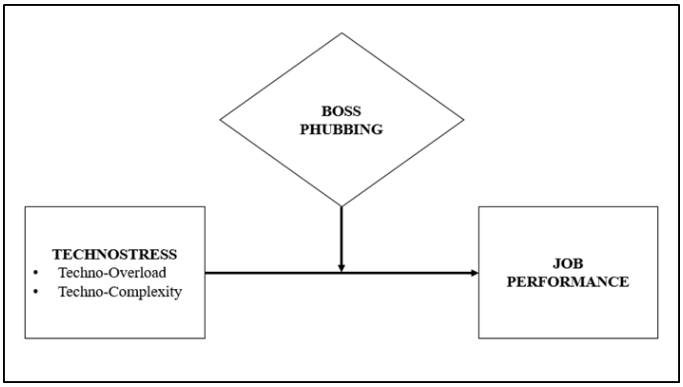

Fig. 1: Theoretical framework for this study.
(Source: Author)

Techno-overload causes individuals to multitask using multiple applications and complete various information-processing activities simultaneously, resulting in rushed and inadequate information processing. Users can work more efficiently or complete their tasks faster within the same amount of time. When someone multitasks, they often lack the time and focus to complete organizational tasks thoroughly and effectively. They also lack sufficient time to investigate novel and creative work processes, and occasionally, they do not have enough time to complete current tasks efficiently, which negatively affects job performance. Based on the reasoning presented above, Hypothesis H1a is framed as: Hypothesis H1a: There is a significant relationship between Techno-overload and job performance.

Techno-complexity refers to circumstances in which users feel unsatisfied with their technical abilities due to the complexity of technology, which causes them to invest more time and energy in learning about it (Califf & Brooks, 2020). Techno-complexity also requires individuals to constantly acquire new skills for utilizing information and communication technologies, which many are unwilling or unable to do. Individuals experience decreased performance on ICT-mediated tasks due to their ineffective attempts to adapt preexisting solutions to the new technologies. Furthermore, individuals attributing their job-related worry and uncertainty to techno-insecurity also report low self-esteem and poor performance, particularly on ICT tasks (Tarafdar, 2019). Thus, from the previous statements, Techno-complexity will affect individuals' job performance because most of the time is spent focusing on completing tasks, which is often wasted on learning about the latest technologies, such as new software. Based on the reasoning presented, Hypothesis H1b is framed as follows: Hypothesis H1b: There is a significant relationship between Techno-complexity and job performance.

Technostress and boss phubbing have also been identified as factors influencing teacher job performance. A previous study by Li and Wang (2021) found that Technostress are one of the factors that can reduce teachers' job performance. Meanwhile, several researchers have looked into how phubbing affects friendships and romantic relationships (Balta et al., 2018; Wang et al., 2017). In contrast to the growing number of studies in the private relationship context, only a few studies have examined the consequences of phubbing on workplace relationships. Although office-related research is rare, the available data suggests that phubbing harms professional relationships (Al-Saggaf et al., 2019). Previous research on phubbing within friendships has found that when someone is phubbed by a friend, they may feel isolated from their social circle (Gerber & Wheeler, 2009). Thus, since both variables can reduce job performance, this study presents the following hypothesis: Hypothesis H2: There is a moderating effect of boss phubbing on the relationship between technostress and job performance.

3.0 Methodology

The details of the methodology for this study are explained as follows:

3.1 Sampling Procedure

Public primary and secondary school teachers in Segamat, Johor, Malaysia, are the target population for this study, as they have been involved in using ICT in the teaching and learning process, as well as in administrative work. Teachers are selected because they are professionals who must adapt their working methods from conventional (lectures, explanations, training) to ICT-based teaching and learning (Kuppusamy & Norman, 2021). This quantitative research employed a non-probability quota sampling technique with a sample size of 320 rural teachers from Segamat. Then, the 320 Segamat rural teachers were divided into two main subgroups: one for primary school and the other for secondary school. Thus, the minimum number of samples required in each subgroup is 160 teachers. So, eight schools will be randomly selected in each subgroup. In conclusion, eight public primary schools will be selected, with a minimum of 20 teachers from each school. In comparison, there will be another eight rural public secondary schools, each with 20 teachers. Then, the teachers must have at least one year of service with a permanent position and already use ICT in their teaching and learning sessions. This research will exclude substitute teachers, as their teaching schedules are flexible, yet they are less likely to use ICT during class.

3.2 Research Instrument

The questionnaire developed in this research is categorized into five sections: A, B, C, D, and E. All five sections are designed to measure the variables of interest in this research and achieve the study's objectives. Section A comprises six demographic questions

for teachers, including gender, ethnicity, marital status, age, highest formal education level, and the level of school at which they teach. Then, Section B discusses general technostress information, including the types of ICT tools teachers use for work purposes, the average daily time teachers spend using ICT tools for work, and the frequency of ICT tool use for work purposes each week. Note that ICT tools include laptops, tablets, and smartphones. Meanwhile, Section C measures the independent variable, Technostress, which consists of Techno-Overload and Techno-Complexity. Additionally, Section D includes questionnaires for the moderating variable, boss phubbing. Lastly, Section E is for the dependent variable of his research, which is job performance, and consists of four validated questions. Surveys were distributed to teachers in selected schools, either in person or via email. Respondents were assured of confidentiality, and the data collection took about two weeks per school. Data were analyzed using SmartPLS Version 4.0 to examine relationships between variables. The use of PLS-SEM was appropriate due to its effectiveness in handling small to medium sample sizes and non-normal data, which aligns with the context of this study.

4.0 Findings

4.1 Measurement Validation

Cronbach's alpha was used to assess internal consistency reliability, and the obtained value must exceed 0.70. This threshold, as outlined by Roni (2014), represents the minimum acceptable level of performance. The values of Cronbach's Alpha for each construct, ranging from 0.847 to 0.953, indicate high levels of internal consistency, exceeding the commonly accepted threshold of 0.70, thus affirming the reliability of the scales for measuring Techno-Overload, Techno-Complexity, Boss Phubbing, and Job Performance.

Table 1. Measurement Instrument

Construct	Item	Loadings	Cronbach's Alpha	Average Variance Extracted (AVE)
Techno-Overload	TOV1	0.815	0.938	0.769
	TOV2	0.858		
	TOV3	0.886		
	TOV4	0.910		
	TOV5	0.912		
Techno-Complexity	TCM1	0.702	0.858	0.639
	TCM2	0.792		
	TCM3	0.797		
	TCM4	0.894		
Boss Phubbing	BP2	0.685	0.889	0.547
	BP3	0.709		
	BP4	0.861		
	BP5	0.755		
	BP6	0.696		
	BP8	0.806		
	BP9	0.643		
Job Performance	JP1	0.951	0.950	0.909
	JP2	0.953		
	JP3	0.956		

(Source: Author)

4.2 Assessment of Significance and Relevance of the Structural Model Relationships

The structural model was evaluated using five analyses, following the suggested techniques for utilizing Partial Least Squares Structural Equation Modeling (PLS-SEM), as depicted in Table 2 (Hair et al., 2017). The analyses involve evaluating several aspects, including (i) identifying collinearity problems using the Variance Inflation Factor (VIF), (ii) assessing the significance and relevance of relationships in the structural model using pvalues, (iii) determining the coefficients of determination (R2), (iv) measuring the effect size using f2, and (v) evaluating the predictive relevance using Q2.

Table 2. Overall structural model result

Hypothesis	Relationship	P-value	Supported	R^2	F^2	VIF	Q^2
H1a	Techno-Overload and job performance.	0.322	Not supported	0.265	0.001	2.381	0.106

H1b	Techno-Complexity and job performance.	0.399	Not supported	0.265	0.000	1.400	0.106

(Source: Author)

4.3 Assessment of Moderation

This assessment focuses on research objective H2, which investigates the moderating effect of boss phubbing on the relationship between Technostress and job performance.

Table 3. The Moderating effect of boss phubbing on the relationship between technostress and job performance is examined in this study.

Relationships	Path Coefficient	P Vales	Results
Boss Phubbing x Technostress-> Job Performances	-0.128	0.112	Not Significant

(Source: Author)

5.0 Discussion

Referring to Table 2, the first hypothesis, H1a, with a p-value of 0.322, was found to have been negatively supported by the original hypothesis. In this case, the negative coefficient shows that when Techno-Overload increases, Job Performance tends to decrease. The findings aligned with the study (Hurbean et al., 2022). His findings suggest that techno-overload harms individual work performance. When employees need additional skills or training, they often believe they must devote time and effort to improving their technology skills, which can interfere with their work and lead to overburdening. Such situations can easily lead to overload, as the individual senses that there is too much to do but not enough working time to complete it, is forced to perform additional work, and struggles to utilize IT effectively. Then, from hypotheses, H1b shows a relationship between Techno-Complexity and Job Performance. Referring to Table 2, as Techno-Complexity increases, there is a slight tendency for Job Performance to decrease. However, the associated p-value of 0.399 shows that this relationship is also insignificant. The result of this study was also supported by (Li & Wang, 2021; Tarafdar et al., 2019). This is because most individuals are intimidated by the diversity of applications, functions, and technical jargon, and need to fully comprehend how the technologies associated with them can be utilized. Fear, anxiety, and worry are common emotions due to the rising complexity of ICTs (Tarafdar et al., 2019).

Moreover, the relationship between the moderation effect of boss phubbing, Technostress, and job performance was examined, as shown in Table 3. The path coefficient for this relationship was found to be -0.128. The p-value associated with this relationship was 0.112. The p-value determines the significance of the relationship. In this case, the p-value of 0.112 indicates that the relationship between boss phubbing, Technostress, and job performance is not statistically significant. In summary, boss phubbing and Technostress have no significant negative relationship with job performance. The results of this study differ from those of Roberts and David (2019). Boss phubbing is linked to decreased employee work satisfaction, performance, and supervisory trust. When supervisors are distracted by their smartphones during discussions with the people they supervise, it is perceived as a violation of employee expectations. Although smartphones are increasingly used in the office, employees still want their supervisors to give them their complete attention. When this is not the case, it can weaken an employee's trust in their supervisor and negatively impact their job satisfaction and performance (Roberts & David, 2019).

The findings indicate that techno-overload and techno-complexity do not have a significant impact on job performance among rural teachers in Segamat. This may be due to their adaptation to limited ICT tools and consistent routines, reducing the stress impact. The insignificant effect of boss phubbing suggests teachers may already be used to minimal supervisor interaction. These results underscore the need for targeted strategies, such as enhanced ICT training, improved infrastructure, and increased leadership engagement, to enhance teacher performance in comparable rural settings where digital transitions are still challenging and support from supervisors is limited.

6.0 Conclusion & Recommendations

This study acknowledged several limitations, including its focus on rural school teachers in Segamat and its reliance on the Transactional Theory of Stress, which may limit its broader generalizability and applicability to other theoretical perspectives. Future research should explore urban or national samples and apply alternative frameworks, such as the Diffusion of Innovation Theory, to offer fresh insights. To address Technostress and improve job performance, schools should provide ongoing ICT training, promote digital literacy, and foster positive leadership practices. Although boss phubbing did not significantly affect job performance in this context, raising awareness and encouraging mindful communication among leaders may still enhance workplace relationships. Future studies could also adopt longitudinal approaches to examine changes over time and explore the evolving role of technology in educational environments.

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Paper Contribution to Related Field of Study

This study contributes theoretically by exploring the understudied influence of Technostress on job performance, moderated by boss phubbing, within the Malaysian education context. It addresses gaps in local research, especially among public school teachers who often face digital workload spillover at home. Practically, these findings benefit school administrators, policymakers, and teacher support units. They urge educational stakeholders to implement strategies that reduce Technostress and foster healthy supervisor-employee interactions, ultimately improving teacher well-being and performance. Highlighting the need for interventions to manage Technostress

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