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The Relationship Between Smart Management Information Systems And Digital Stress Among Public School Employees

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Abstract:

This study aimed to measure and analyze the relationship between intelligent management information systems (IMS) and digital stress among public school employees. It employed a descriptive analytical method, deemed most suitable for the study's nature and objectives. The study population consisted of public-school employees in Jeddah, including teachers, administrators, and educational supervisors, during the second semester of the 2025-2026 academic year. A random sample was selected, and the questionnaire was distributed electronically.

The key findings were as follows:

- 81.03 % of the sample agreed with the items in the "Level of Use of Intelligent Management Information Systems in Public Schools" section.
- 69.06 % of the sample agreed with the "Level of Digital Stress Among Public School Employees".
- No statistically significant relationship was found between IMS and digital stress among employees .
- There were no statistically significant differences between the mean scores of the study sample attributable to the demographic variables of gender, educational qualification, years of experience, job title, or daily use of digital administrative systems.

The most important recommendations were as follows:

Strengthening technical support in schools, simplifying and reducing the number of electronic platforms, promoting the positive aspects of smart systems, reviewing digital pressures despite the lack of a statistical relationship, and generalizing policies without demographic bias.

Introduction:

The current era is witnessing an accelerated digital revolution in all aspects of life, and the educational sector has not been isolated from this, as institutions have rushed to adopt smart management information systems to improve operational efficiency and institutional performance. This digital transformation has introduced advanced data management systems in schools, such as Learning Management Systems LMS electronic ,(reporting platforms, institutional communication apps, and centralized databases for students and staff. In this context, Alfoudari and Durugbo point out that "the use of smart classrooms and digital administrative systems in education has become an inevitable necessity to keep pace with technological development; however, this transformation carries with it psychological and social challenges for users, especially regarding feelings of "technostress(Alfoudari & Durugbo, 2025, p. 3). While these systems aim to facilitate work and improve productivity, they conversely create new pressures on employees who must keep up with continuous technical .developments

) "In digital transformation, the concept of "digital stress" or "technostressTechnostress emerges as one of (the main challenges facing employees in educational institutions. Digital stress is defined as a negative psychological state arising from an individual's inability to adapt to the requirements of using technology in a healthy and effective manner. Mark et al. indicate that "email overload and constant digital interruptions have "unexpected effects on the stress levels and psychological well-being of employees in digital environments)Mark, Iqbal, & Johns, 2020, p. 203 In the context of public schools, this stress manifests as the feeling of .(pressure resulting from the multitude of digital platforms that an employee must deal with daily, the difficulty of keeping up with constant updates, anxiety about technical errors, and the overlap between digital work requirements and personal life\

The problem of study

Based on the researcher's field experience and observation of practical reality in public schools, the study problem is defined by this question

What is the relationship between smart management information systems and digital stress among public school employees?

Study questions

Main question

What is the relationship between smart management information systems and digital stress among public school employees?

Sub-questions

1. What is the level of smart management information system usage in public schools from the employees' perspective
2. What is the level of digital stress among public school staff
3. Is there a significant relationship between smart management information system characteristics (ease of use, usefulness, service quality) and employee digital stress
4. Is there a statistically significant relationship between the requirements for using smart management information systems (digital load, platform multiplicity, continuous updates) and digital stress among employees
5. Are there significant differences in digital stress levels based on demographic variables (gender, experience, qualification, job title)

Study objectives

To measure and analyze the relationship between smart management information systems and digital stress among public school employees

Sub-objectives

1. Identify the level of smart management information system usage in public schools
2. To identify the level of digital stress among employees in public schools
3. Test the relationship between smart management information system characteristics (ease of use) and digital stress
4. Test the relationship between smart management information system characteristics (system usefulness) and digital stress
5. Test the relationship between smart management information system characteristics (service quality) and digital stress
6. Test the relationship between smart management information system requirements (digital load) and digital stress
7. Test the relationship between smart management information system requirements (platform multiplicity) and digital stress
8. Test the relationship between smart management information system requirements (continuous updates) and digital stress
9. Reveal differences in digital stress levels based on demographic variables

Significance of the study

1. :Scientific significance

This study helps bridge the research gap regarding the scarcity of Arabic studies—to the researcher's knowledge—addressing digital stress from smart management information systems in education, especially in public schools. Winborne and Johnson indicate that "the successive technological influx in education creates) "an urgent need to understand how these technologies affect those working in the educational field Winborne & Johnson, 2025, p. 2 The study also tests technostress theories in the Arab environment, contributing to .(understanding if global results apply to the local context

2. :Practical Significance

The study provides results and recommendations for decision-makers in ministries and schools to design and implement smart management information systems while considering employee mental health. It also helps guide training programs to address digital stress and provides guidelines for balancing technical benefits with .employee psychological well-being

Literature Review

:Arabic Studies

1- :First Arabic Study

- Study Title: The Relationship between Self-Efficacy of Pre-Service Teachers, Intensity of ChatGPT ,Use and Their Practical Training Stress – 2025
- .Researchers: Amal Ibrahim, Omar Al-Ouran, Melinda Shin, Amer Jaafar, Aseel Ajlouni
- .Location: Jordan – two public universities

- Study Population and Sample: The sample consisted of 143 male and female pre-service special education teachers during the second semester of the 2024-2025 academic year
- Study Objective: The study aimed to examine the relationship between teachers' self-efficacy in teaching students with disabilities, the intensity of their use of the ChatGPT application, and the level of stress they perceive during the Practicum period
- Study Instrument: Three standardized instruments were used, with verified validity and reliability, to measure the three variables (self-efficacy, ChatGPT use, and perceived stress)
- Statistical Methods Used: Descriptive correlational predictive approach, arithmetic means, standard deviations, and regression analysis
- Key Findings: The results showed that the level of ChatGPT use was moderate, as was the level of perceived stress. The regression equation indicated that self-efficacy was the only significant predictor of perceived stress among teachers, while the use of ChatGPT showed no statistically significant effect on the stress level
- Uniqueness: This is among the first Arabic studies to address the impact of generative artificial intelligence (ChatGPT) on professional stress in education, focusing on a marginalized group in the literature (pre-service special education teachers) and provided important evidence that self-confidence may be more important than new technology in reducing stress

2- :Second Arabic Study

- Study Title: Technostress and Its Relationship to Job Productivity among Faculty Members at Zagazig University – 2024
- Researchers: Nesma Abdullah Mahmoud, Iman Mohamed Abdel-Sattar, Mona Fathi Ali Zeitoun
- Location: Egypt – Zagazig University
- Study Population and Sample: The study population included faculty members in seven faculties at Zagazig University who use technology in their work tasks. A sample of 403 faculty members was selected
- Study Objective: The study aimed to assess the level of Technostress among faculty members, study its impact on job productivity, and identify the most influential causes of technostress
- Study Instrument: A semi-standardized questionnaire was used, which included variables related to the causes of technostress (e.g., techno-overload, techno-invasion, techno-complexity, and techno-insecurity)
- Statistical Methods Used: Descriptive statistics, correlation coefficients, and multiple regression analysis using SPSS software
- Key Findings: The results showed significant (negative and positive) correlations between the dimensions of technostress and productivity. The variables with the most impact on productivity were Techno-uncertainty, Techno-overload, Techno-complexity, and the availability of a good internet network
- Uniqueness: This study focused on the complex relationship between various technostress dimensions and productivity, revealing that some stress types may temporarily increase productivity, a nuanced finding compared to studies assuming a simple inverse relationship

Second: Foreign Studies

1-:First Foreign Study

- Study Title: What determines university instructors' continuance intentions for smart classroom use: Examining the role of service quality, connectedness and technostress. 2025 – "
- Researchers: Aisha M. Alfoudari, Christopher M. Durugbo
- Location: Gulf Cooperation Council (GCC) countries – higher education institutions
- Study Population and Sample: The study sample consisted of 387 faculty members at higher education institutions in the GCC countries, selected using convenience sampling
- Objective of the Study: The study examined the relationship between faculty perceptions of service quality, their preference for student connectedness, feelings of technostress, and their intention to continue using smart classrooms
- Study Instrument: An electronic questionnaire was used, developed based on SERVQUAL models and information systems continuance models
- Statistical Methods Used: Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to analyze the data and test the hypotheses
- Key Findings: Results showed that faculty perceptions of service quality are significantly and negatively associated with technostress, and positively associated with their preference for student connectedness. Feelings of technostress were also negatively associated with the intention to continue using smart classrooms

2-:Second Foreign Study

- Study Title: Techno-eustress under remote work: a longitudinal study in higher education

teachers.2025 – "

- :ResearchersCristina G. Nascimento, Rui Silva, Paulo Lopes, Fernando Moreira
- .Location: Portugal – multiple public universities
- Study Population and Sample: The study population consisted of higher education teachers in Portuguese universities. A sample of 712 teachers was selected using a two-wave longitudinal paired survey design, with data collected during two distinct periods during the COVID-19 pandemic
- Objective of the Study: The study aimed to investigate how Techno-eustress evolves among higher education teachers over time, and to examine the impact of three technological stressors (usefulness, reliability, complexity), two coping mechanisms (synergistic framing, technical support), and three individual traits (adaptive resilience, techno-mindfulness, age) on positive psychological responses, and subsequently on job satisfaction and job performance
- Study Instrument: A questionnaire developed according to the Holistic Technostress Model, was used with its validity and reliability verified
- Statistical Methods Used: Descriptive statistics, Path Analysis) and Structural Equation Modeling, SEM (for longitudinal data
- Key Findings: The results showed that the usefulness of technology leads to a positive psychological response over time; that techno-mindfulness, adaptive resilience, and synergistic framing positively influence the psychological response; and that the positive psychological response, in turn, positively influences job satisfaction and job performance over time
- Uniqueness: This is one of the first longitudinal studies to address the positive aspect of technostress (not just the negative) in higher education, providing a dynamic understanding of the relationship between technology and professional stress rather than a static cross-sectional view

Smart Management Information Systems

The concept of Management Information Systems is a cornerstone of modern management, having undergone significant evolution from the mid-twentieth century to the present day. Laudon & Laudon 2020, p.46, define a management information system as "an integrated set of components for collecting, storing (and processing data and for providing information, knowledge, and digital products to support decision making, coordination, control, analysis, and visualization in an organization." O'Brien & Marakas 2011, p. 8 add that a management information system combines technology, people, and procedures to provide the (right information to the right person at the right time. Stair & Reynolds 2020, p. 10 agree with this (perspective, noting that information systems represent the link between raw data and sound administrative decisions

.Regarding the concept of "intelligence" added to information systems, Turban et al 2018, p. 72 indicate that (Intelligent Systems are those capable of simulating human thought processes through the use of Artificial Intelligence and Machine Learning) techniques. Sharda et al 2021, p. 6 define intelligent management (information systems as "the advanced generation of information systems capable of analyzing Big Data, extracting hidden patterns and trends, and providing proactive recommendations to managers

.Frank et al 2019, p.344 emphasize that the essence of intelligence in these systems lies in their ability to (continuously learn from new data and self-improve their performance without direct human intervention

Components and essential elements of smart management information systems

Intelligent management information systems consist of five basic components that integrate to achieve desired goals. Laudon & Laudon 2020, p. 20 identify these components as (Hardware, Software, Data, Networks, and People) O'Brien & Marakas 2011, p. 31 add that neglecting any of these components leads to a (malfunction in the system's performance as a whole. Stair & Reynolds 2020, p. 16 stress that the human (element is the most important despite immense technological progress; technology alone does not create an intelligent system without qualified personnel to operate and maintain it

Types and classifications of smart management information systems

Smart management information systems can be classified by several criteria, most importantly the (management level they serve and the organizational function they cover. Laudon & Laudon 2020, p. 44 (explain that systems can be divided vertically into Operational-level Systems, Knowledge-level Systems, Management-level Systems and Strategic-level Systems) O'Brien & Marakas 2011, p. 42 add that (contemporary intelligent systems are now capable of serving more than one management level simultaneously due to their horizontal and vertical integration

) As for functional classification, as mentioned by Stair & Reynolds 2020, p. 34 it includes (Smart HRIS, Smart Financial IS, Smart Marketing IS and smart production and operations information systems. Turban, et al 2018, p. 82 point to the emergence of modern types such as (Smart CRM systems that use artificial

intelligence to analyze customer behavior and predict their needs. In an educational context, Sharda et al (2021, p. 42) add an important category (Smart Educational MIS which includes systems for managing students, teachers, curricula, and school resources)

Characteristics and advantages of smart management information systems

Smart management information systems are characterized by a set of features that make them superior to traditional systems. Frank et al (Frank et al., 2019, p. 352) identify four main characteristics (Autonomy, in performing tasks without human intervention; Learning Capability, from data and past experiences; Interactivity with users and the surrounding environment, and Adaptability & to new variables. Laudon (Laudon & Laudon, 2020, p. 52) add the characteristic of (Comprehensiveness as smart systems, cover all aspects of organizational operations and integrate with each other seamlessly). As for the advantages achieved by these systems, O'Brien & Marakas (O'Brien & Marakas, 2011, p. 56) summarize them as: speed and accuracy of data processing, which reduces human error; the provision of Real-time Information that supports rapid response to variables; and the improvement of the quality of administrative decisions through advanced analytics and smart recommendations. Turban et al (Turban et al., 2018, p. 89) emphasize that another prominent advantage is the reduction of long-term operational costs (by automating routine processes and reducing resource waste. Gupta & George (Gupta & George, 2016, p. 63) add the advantage of (Transparency as smart systems allow for the precise tracking of the path of operations and transactions, which enhances accountability and good governance)

Challenges and obstacles facing the implementation of smart management information systems

Despite the numerous advantages of smart systems, their implementation is not without fundamental challenges and obstacles. Laudon & Laudon (Laudon & Laudon, 2020, p. 58) point out that the high financial cost of acquiring and developing these systems represents a major obstacle, especially for organizations with limited budgets. Stair & Reynolds (Stair & Reynolds, 2020, p. 46) add that the need for advanced technical infrastructure, such as high-speed networks and secure data centers, poses a significant challenge in less developed environments. O'Connor & Martinsons (O'Connor & Martinsons, 2006, p. 88) emphasize the challenge of Resistance to Change by employees who fear losing their jobs or their inability to keep up with new technologies. Among the prominent challenges is also what Turban et al (Turban et al., 2018, p. 97) mention regarding issues of Security and Privacy as smart systems deal with massive amounts of sensitive data, making them a target for cyberattacks. Sharda et al (Sharda et al., 2021, p. 55) add the challenge of the (Skills Gap, meaning the shortage of qualified human personnel to handle and maintain these advanced systems. As for Frank et al (Frank et al., 2019, p. 358) they highlight a relatively recent challenge, which is (Technostress, which affects users as a result of the pressure caused by constant interaction with smart systems and their renewed requirements)

Technostress

Technostress is considered a relatively modern concept in the literature of organizational behavior and industrial psychology, and the term first appeared in the 1980s. Brod (Brod, 1984, p. 16) defines technostress as "a state of psychological and behavioral maladaptation resulting from an individual's inability & to deal with the requirements of computer and information technologies in a healthy manner." Weil (Weil & Venables, 2022, p. 3) add that the concept has evolved to include not only the inability to deal with technology but also the pressures resulting from an Always-on Culture and the constant flow of notifications and messages. As for Tarafdar et al (Tarafdar et al., 2007, p. 303) they define techno-stress as "the negative psychological phenomenon experienced by end-users of information technology as a result of their inability to keep pace with rapid technological changes or adapt to the requirements of new digital work." Ivanov & Cachel (Ivanov & Cachel, 2021, p. 102) point out that techno-stress differs from traditional job stress in that its source is clearly defined as "digital technology" rather than general work pressures such as task load or role conflict. Salanova et al (Salanova et al., 2013, p. 424) emphasize that techno-stress has become a global phenomenon affecting millions of workers in various sectors with the acceleration of digital transformation imposed by the COVID-19 pandemic

Dimensions and components of technostress

The model by Tarafdar et al (Tarafdar et al., 2007) is widely adopted for studying technostress dimensions (identifying five main factors. The first is "techno-overload Techno-overload and is defined as "forcing users to work faster and for longer periods due to the constant connectivity enabled by technology Tarafdar et al., 2007, p. 315) Ivanov & Cachel" (Ivanov & Cachel, 2021, p. 105) add that this dimension is clearly manifested in the educational environment when teachers are required to enter data on digital platforms in addition to their primary teaching duties

) "The second dimension is "techno-complexity" Techno-complexity which refers to "the user's feeling of not possessing sufficient skills to deal with new software and applications, forcing them to spend time and effort" (Tarafdar et al., 2007, p. 316). Salanova et al. (2013, p. 428) explain that this dimension particularly affects older age groups of workers who were not raised in a digital environment. Ramasamy & Thandar Oo (2026, p. 520) support this argument noting that frequent software and system updates exacerbate this dimension for users.

) "The third dimension is "techno-insecurity" Techno-insecurity which expresses "users' fear of losing their jobs to colleagues who are more tech-savvy or to automation and artificial intelligence" (Tarafdar et al., 2007, p. 317). Weil & Venables (2022, p. 7) add that this fear may sometimes be justified especially in routine jobs susceptible to automation. The fourth dimension is "techno-uncertainty" Techno-uncertainty which refers to "constant anxiety about the successive changes and updates in the technical work environment, leaving the user in a state of constant anticipation and instability" (Tarafdar et al., 2007, p. 318). Tarafdar et al. conclude their five dimensions with the fifth dimension, "techno-invasion". Techno-invasion defined as "the impact of technology on the user's personal life, where they become connected to work all the time via email and messaging applications" (Tarafdar et al., 2007, p. 319).

Causes and sources of technostress in the work environment

There are many causes and sources of techno-stress in contemporary organizational environments, which can be classified into individual, organizational, and technical causes. Ivanov & Cachel (2021, p. 108) explain that individual causes include: digital illiteracy (Digital Illiteracy low technical self-efficacy), Technical Self-Efficacy and certain personality traits such as neuroticism, Neuroticism which make an individual more prone to stress. Ragu & Panda (2022, p. 215) add an important individual factor, "digital age," where digital immigrants (Digital Immigrants—those born before the internet era—) suffer from greater stress compared to digital natives (Digital Natives).

As for organizational causes Salanova et al. (2013, p. 431) identify them as: poor training provided to employees on new systems, lack of adequate technical support, and an organizational culture that mandates immediate responses to messages and notifications even outside official working hours. Ramasamy & Thandar Oo (2026, p. 525) point out that the absence of clear policies for separating work and personal life in the digital age exacerbates the problem of digital stress. Weil & Venables (2022, p. 10) add that excessive Electronic Monitoring of employee performance increases their levels of stress and anxiety.

Regarding technical causes Brod (1984, p. 56) states that the complexity of user interfaces, frequent technical glitches, and slow systems are among the most prominent causes of frustration and stress. Tarafdar et al. (2007, p. 310) add that constant updates to software and applications, despite their security and functional importance, are a source of annoyance and stress for users who are forced to relearn how to use the system. Turban et al. (2018, p. 99) conclude by noting that Notification Clutter from various applications and platforms distracts the user and drains their mental energy, leading to digital stress.

Effects and Consequences of Digital Stress

Digital stress has multiple negative effects that extend to the individual, the organization, and society as a whole. At the individual level Salanova et al. (2013, p. 435) explain that digital stress is associated with lower Job Satisfaction and increased rates of Burnout, anxiety, and depression. Weil & Venables (2022, p. 12) add that physical health effects include chronic headaches, eye strain, neck and back pain, and sleep disorders resulting from constant exposure to screens. Ragu & Panda (2022, p. 220) confirm that chronic digital stress may lead to serious long-term health problems such as high blood pressure and heart disease.

At the organizational level Tarafdar et al. (2007, p. 322) indicate that digital stress leads to Productivity Loss and increased rates of absenteeism, lateness, and Turnover. Ivanov & Cachel (2021, p. 112) add that employees suffering from high digital stress are less innovative and creative and less willing to adopt new technologies, which hinders the organization's digital transformation efforts. The study by Ramasamy & Thandar Oo (2026, p. 530) indicates that digital stress has a hidden financial cost for organizations represented by healthcare costs for employees, loss of productivity, and the hiring and training of replacements for resigned employees.

Strategies for Reducing and Managing Digital Stress

In light of the severe negative effects of digital stress, there is a need for effective strategies to reduce and manage it at both the individual and organizational levels. Brod (1984, p. 120) recommends that individuals practice a Digital Diet which involves reducing screen time and allocating regular breaks away from electronic devices. Weil & Venables (2022, p. 15) add other individual strategies such as: learning digital time management skills, turning off unnecessary notifications, and allocating specific times to check email instead of responding immediately to every message.

At the organizational level Tarafdar et al. (2007, p. 325) suggest a set of strategies including: providing

continuous and appropriate training programs to enhance employees' technical self-efficacy, and establishing a system of effective and responsive technical support, and involving end-users in the design and development processes of new systems to ensure their ease of use. Salanova et al. (2013, p. 440) add the importance of establishing clear organizational policies that encourage the right to disconnect outside of official working hours.

Ragu & Panda (2022, p. 225) point to the strategy of (Technostress Awareness as a "necessary first step, where employees and managers must be educated about what this phenomenon is, its symptoms, its effects, and how to deal with it. Ramasamy & Thandar Oo (2026, p. 535) conclude by emphasizing that managing technostress is a shared responsibility between the individual and the organization, and that neglecting it will undermine the benefits expected from investment in technology and digital transformation.

Smart Management Information Systems in Saudi Public Schools

The education sector in the Kingdom of Saudi Arabia has witnessed a radical shift toward digitalization in recent years, within the framework of the Kingdom's Vision 2030, launched by His Royal Highness Prince Mohammed bin Salman bin Abdulaziz Al Saud - may God protect him - in 2016. Vision 2030, as stated in the official vision document Saudi Vision 2030, 2016, p. 40 aims to "bridge the gap between education outputs, and the requirements of the labor market, develop public education, and guide students toward appropriate career and vocational choices." Digital transformation is one of the fundamental pillars for achieving these ambitious goals. Ministry of Education, 2022, p. 7.

The Saudi Ministry of Education affirmed in its strategic plan for information technology. Ministry of Education, 2021, p. 12 that "digital transformation is not an option but an inevitable necessity to improve (education, increase spending efficiency, and enable educational leaders to make data-driven decisions.

The Human Capability Development Program one of the executive programs of Vision 2030, has adopted, ambitious goals for digitizing the education sector. The program's report HCDP, 2021, p. 23 indicates that (one of its targets is to "increase the percentage of schools connected to a unified digital platform for managing educational and administrative operations to 100%." To achieve this, the Ministry of Education has invested heavily in developing and updating smart management information systems, most notably the "Noor" system for educational information management and the "Faris" system for human resources and financial management. Alaskar et al., 2025, p. 3. The Saudi Quality Council, 2023, p. 15 confirms that these systems have contributed tangibly to improving the efficiency of school administrative processes, reducing human error, and accelerating the completion of transactions.

"Noor" Educational Information Management System (Concept and Components)"

The NOOR System is the cornerstone of the digital transformation ecosystem for school administration in the Kingdom of Saudi Arabia. Alaskar et al. (2025, p. 5) define the Noor system as "a comprehensive and integrated national platform for managing educational data and digital governance for the public education sector in the Kingdom of Saudi Arabia, aiming to automate administrative and academic processes and link all elements of the educational system into a unified central database." The implementation of the Noor system began in the 1430-1431 AH academic year, gradually expanding until it covered all public and private schools in the Kingdom, currently serving over 33,000 schools, more than 6 million students, and about half a million teachers (Ministry of Education, 2021, p. 18).

The Noor system has numerous modules covering all aspects of the educational and administrative process. Alzahrani (2023, p. 88), explains that prominent components include: Student Affairs (registration (admission, transfer), Teacher Affairs (schedules, teaching load, attendance), and Academic Affairs (grades certificates, reports). Alassaf (2024, p. 112) adds components like: Central Electronic Testing, parent (communication via the "Parent Portal," and statistical reporting for educational departments. The Ministry of Education's performance report (Ministry of Education, 2022, p. 22 indicates the system processes over 100 (million queries and updates monthly).

"Faris" Human Resources and Financial Management System"

In addition to the Noor system, which focuses on educational and pedagogical aspects, Saudi public schools rely on another smart management system known as the FARES System. Aldossary (2024, p. 45) defines the Fares system as "a comprehensive electronic system for managing human resources, financial, and administrative affairs for all Ministry of Education personnel, including teachers and administrators." This system was developed to serve as a unified Self-Service platform, enabling employees to complete their professional and financial transactions electronically without the need for paper-based visits to various departments. Ministry of Education, 2021, p. 25.

The services provided by the Fares system are numerous and cover all aspects of a teacher's professional life. Alotaibi (2023, p. 56), explains that the most prominent of these services include: inquiring about salaries

allowance statements, and financial entitlements; submitting and electronically approving various types of leave requests (sick, regular, extraordinary, and emergency); submitting requests for secondment and nomination for training programs; updating personal and banking data; and printing salary verification letters and service certificates. Alghamdi (2022, p. 33) adds that the system also includes specialized units for human resources departments in education offices and general administrations, such as: the annual performance evaluation unit, the promotions and merit-based selection unit, and the workforce and teaching requirements planning unit.

Benefits of implementing smart systems in Saudi public schools

Implementing smart management information systems like Noor and Fares in Saudi public schools has numerous tangible benefits. At the administrative level Alzahrani (2023, p. 92) notes key benefits automation of routine processes, saving thousands of manual work hours, and standardizing procedures across all schools in the Kingdom, which has enhanced fairness transparency and provided accurate, real-time data to support evidence-based decision-making. Allassaf (2024, p. 118) adds that the integration between Noor and Fares provides a holistic view of school human resources, students, and academic/financial performance through interactive Dashboards.

At the level of teachers and staff Alotaibi (2023, p. 62) indicates that the Fares system has granted teachers greater autonomy in managing their professional and financial affairs without the need to leave the school or disrupt the educational process. Teachers can now submit leave or secondment requests and track the status of their applications electronically without visiting the education department. Aldossary, 2024, p. 50 As for the Noor system Alrasheed (2023, p. 73) explains that it has eased the administrative burden on teachers by automating the processes of recording grades, calculating percentages and averages, and issuing quarterly reports, thereby allowing teachers to focus more on their primary teaching and pedagogical tasks.

Regarding students and parents Alghamdi (2022, p. 40) states that the "Parent" portal in the Noor system has allowed mothers and fathers to monitor their children's academic levels daily, including attendance, absences, grades, and behavior, which has strengthened the partnership between the school and the family. Alaskar et al. (2025, p. 9) add that the system has provided students and parents with numerous electronic services, such as registration for the first grade of primary school, school transfers, and access to centralized test results, without the need for personal visits to the school or the education department. This has positively reflected on the level of beneficiary satisfaction, as a study by the Ministry of Education (2022, p. 35) indicated that 85% of surveyed parents expressed their satisfaction with the Noor system's electronic services.

5 Challenges facing the implementation of smart systems in Saudi school

Despite the numerous benefits that smart management information systems have achieved in Saudi public schools, their implementation has not been without fundamental challenges and obstacles that require addressing. Alsubaie Alsubaie, 2024, p. 82 explains that one of the most prominent of these is the "technical challenge," represented by frequent internet service outages in some remote areas and periodic technical failures that affect the system, especially during peak times such as the end of the semester when grades are being entered. Alzahrani Alzahrani, 2023, p. 99 adds that the technical infrastructure in some older schools still needs to be updated to keep pace with the requirements of smart systems in terms of connection speed and the quality of peripheral devices.

Another equally important challenge is the "human challenge" related to competencies and skills. Allassaf Allassaf, 2024, p. 125 points out that a segment of teachers and administrators, especially those in older age groups and those who have spent many years working with the paper-based system, find it difficult to adapt to new digital systems. As Alotaibi Alotaibi, 2023, p. 68 explains, these individuals suffer from weak basic digital skills, which makes them rely on their colleagues or technical support to complete their simple transactions, which in turn increases the burden on colleagues who are more tech-savvy. Aldossary Aldossary, 2024, p. 58 adds that the training programs Ministry training on these systems, while frequent, is often overly theoretical and intensive, failing to address individual trainee differences.

Perhaps one of the most important challenges that has begun to surface in recent years is the "techno-stress challenge" that falls on the shoulders of teachers and administrators as a result of intensive interaction with these systems. Alrasheed Alrasheed, 2023, p. 79 explains that the Saudi teacher is now required, in addition to their basic teaching duties, to enter large amounts of data into the Noor system on a daily basis (absences tardiness, coursework grades, skills, remedial plans), which doubles their working hours and extends beyond official working hours and into the weekend. This is consistent with the concept of "techno-overload" (Techno-overload) referred to by Tarafdar et al (Tarafdar et al., 2007, p. 315) Alghamdi (Alghamdi, 2022, p. 48) adds that frequent and sometimes unannounced updates to the Noor and Faris systems cause "techno-complexity" (Techno-complexity) and "techno-uncertainty" (Techno-uncertainty among a wide segment of users).

Manifestations of techno-stress among employees in Saudi public schools in light of the use of the Noor and Faris systems

) "The first dimension of techno-stress, which is "techno-overloadTechno-overload is clearly evident in the ,() reality of Saudi teachers. AlharthiAlharthi, 2023, p. 112 explains that the average time a teacher spends (weekly dealing with the Noor system exceeds 8 additional hours outside of official class hours. Aljohani)Aljohani, 2024, p. 67 confirms that this additional burden is not limited to new teachers, but also includes (experienced teachers, especially with the continuous expansion of system requirements regarding skills and) indicators that must be monitored and evaluated. As for AlenaziAlenazi, 2023, p. 93 he points out that the ,(digital open-door policy" that allows teachers, parents, and administration to communicate around the clock" via the Ministry's various platforms increases the intensity of this dimension, as the teacher feels they are "on .call" all the time

) "As for the second dimension, "techno-complexityTechno-complexity it is clearly evident in the challenges ,() teachers face with the continuous updates to the Noor and Faris systems. AlmalkiAlmalki, 2024, p. 55 (,mentions that the Ministry of Education launches an average of 3-4 major updates per year to the Noor system some of which radically change the user interface or data entry mechanism. This forces the teacher, as Alkhaldi)Alkhaldi, 2023, p. 121 explains, to relearn how to use the system almost every academic year, which (constitutes an additional cognitive and mental burden, especially for older age groups of teachers who were) not raised in a purely digital environment. AlshammariAlshammari, 2024, p. 76 supports this argument by (pointing out that 40% of the teachers surveyed in his study expressed their constant need for the help of colleagues or technical support to complete their transactions on the Noor system despite having used it for .years

,The dimensionThe thirdTechno-insecurity lies in teachers' fears that technology will replace them or ,) diminish their importance. AlbalawiAlbalawi, 2024, p. 102 explains that the growing trend toward digital (education and smart learning platforms like the "Madrasati Platform" has raised concerns among a segment of) teachers regarding the future of the traditional teaching profession. AlrwailiAlrwaili, 2023, p. 84 adds that (some teachers fear that "automation" will reach a stage where the human teacher is dispensed with in favor of recorded digital content and virtual teachers, which falls under the concept of techno-insecurity as formulated) .by Tarafdar et alTarafdar et al., 2007, p. 317) Alsulami .(Alsulami, 2024, p. 69 confirms that this feeling (is reinforced among teachers who are less proficient in using technology, as they view their more skilled .colleagues as a threat to their job stability

,The fourth dimensionTechno-uncertainty manifests through constant changes in educational policies ,) related to digital systems. AlharbiAlharbi, 2023, p. 135 points out that teachers live in a state of constant (anticipation to know what is new in the system and what additional requirements will be imposed on them this) year. AlmutairiAlmutairi, 2024, p. 59 cites the example of decisions to add new performance indicators or (.change skill-tracking mechanisms, which often reach teachers without sufficient prior notice or training) AlqahtaniAlqahtani, 2023, p. 108 adds that this state of uncertainty intensifies at the beginning of each (school year and during exam periods, which increases anxiety and stress levels among teachers and negatively .affects their focus on their core teaching tasks

,The fifth and final dimensionTechno-invasion is one of the most visible dimensions in the daily lives of ,) teachers. AlamriAlamri, 2024, p. 48 explains that the Saudi teacher receives dozens of notifications daily (,from the Noor system (student absence, parent inquiry, administrative directive, grade entry deadline alert)) which keeps them in a state of constant connection to work even during their weekend. AldawsariAldawsari, 2023, p. 92 adds that the "Tawakkalna" and "Madrasati" smartphone applications have exacerbated this () problem, as there are no longer clear boundaries between work time and rest time. AlshalanAlshalan, 2024, p. 81 in her study on Saudi female teachers, indicates that this techno-invasion particularly affects mothers ,(who are teachers, as they find it difficult to balance the demands of their families with the continuous .requirements of digital systems

Factors Influencing the Level of Techno-stress Among Saudi Public School Teachers

The level of techno-stress varies among teachers according to a set of individual, organizational, and technical) factors. Regarding individual factors, AlotaibiAlotaibi, 2024, p. 63 indicates that "age" is one of the (strongest predictors of the level of techno-stress, as older teachers (over 50 years old) suffer from higher levels) of stress compared to their younger colleagues. AlsubaieAlsubaie, 2023, p. 116 attributes this to the fact (" thatDigital Immigrants require greater cognitive effort to adapt to modern digital systems compared to ") "Digital Natives) Alqahtani ".Alqahtani, 2024, p. 71 adds that the "gender" factor also plays an important (role, as his study showed that female teachers suffer from higher levels of techno-stress compared to male .teachers, which is attributed to the additional family burdens that women bear in Saudi society

".Other individual factors that influence this include "years of experience" and "educational qualification) AlghamdiAlghamdi, 2023, p. 89 explains that teachers with long experience (more than 15 years) suffer (the most from digital stress, not because of a lack of competence, but because they are accustomed to traditional

paper-based work methods and find it difficult to change their deeply ingrained habits. Regarding educational qualification, AlzahraniAlzahrani, 2024, p. 54 points out that bachelor's degree holders suffer from higher stress than postgraduate degree holders, perhaps because the latter were exposed to research experiences that required more in-depth use of technology during their studies. AlmalkiAlmalki, 2023, p. 133 adds another "important factor, which is Technical Self-Efficacy noting that the more confident a teacher is in their ability", to handle technology, the lower their level of digital stress

In terms of organizational factors, "technical support" is at the forefront. AlrasheedAlrasheed, 2024, p. 97 explains that the absence of immediate technical support in schools is a major source of stress, as a teacher facing a technical problem while entering grades, for example, is forced to wait for hours or days until support arrives from the education administration. AlharbiAlharbi, 2024, p. 44 adds that the lack of modern computers in schools and the poor state of the network in some areas exacerbate the problem. AlenaziAlenazi, 2023, p. 101 indicates that the "organizational climate" plays an important role; in schools where cooperation and the exchange of expertise among colleagues prevail, levels of digital stress decrease significantly

The effects of digital stress on the job performance and mental health of teachers in Saudi public schools

The impact of digital stress is not limited to the psychological aspect alone, but extends to the teacher's job performance and the quality of educational outcomes. AljohaniAljohani, 2023, p. 110 explains that a teacher suffering from high levels of digital stress is less focused in their classes, less patient with their students, and more prone to making errors in data entry, which requires repeating work many times. AlrwailiAlrwaili, 2024, p. 68" adds that digital stress is negatively associated with the level of (Job Satisfaction among teachers, as his study showed that the most stressed teachers are the ones most likely to consider leaving the teaching profession or moving to administrative jobs that do not involve direct interaction with complex digital systems

Regarding mental and physical health, AlshehriAlshehri, 2023, p. 129 indicates that chronic digital stress "leads to symptoms of Burnout which consist of", Emotional Exhaustion, Depersonalization and, Reduced Personal Accomplishment In her study of a sample of secondary school teachers in the Asir region, she found that 35% of them suffer from burnout symptoms directly related to dealing with digital systems. AlharthiAlharthi, 2024, p. 61 adds physical health symptoms such as migraines, eye strain, neck and back pain, and sleep disorders, which the teachers themselves attribute to the long hours spent at computer screens completing mandatory tasks on the Noor system

The impact of digital stress extends to the social and family relationships of teachers. AlmutairiAlmutairi, 2023, p. 84" explains that (Work-Family Conflict is exacerbated in the era of digital systems, as teachers find themselves forced to work on data entry and monitor the system at times they were supposed to spend with their families. AlamriAlamri, 2024, p. 57 adds that this particularly affects married female teachers and mothers, who suffer from double pressures in trying to balance the requirements of digital work with the requirements of family and children. AlsulamiAlsulami, 2023, p. 103 warns that the continuation of this situation may lead to real family problems and a decline in the quality of family life for teachers

At the school level as a whole, AlqahtaniAlqahtani, 2024, p. 79 indicates that digital stress can be contagious, as feelings of tension and frustration spread from stressed teachers to their colleagues, creating a negative organizational climate in the school. AldawsariAldawsari, 2024, p. 92 adds that schools whose teachers suffer from high levels of digital stress record higher rates of sick leave and emergency leave requests which affects the stability and continuity of the educational process

Proposed strategies to reduce digital stress among Saudi public school teachers

In light of the aforementioned negative effects of digital stress, there is a clear need to develop practical and effective strategies to reduce it within the Saudi school environment. These strategies can be classified into three levels: ministry-level strategies (policies), school-level strategies (school administration), and individual-level strategies (the teacher themselves). At the ministry level, AlrasheedAlrasheed, 2023, p. 108 suggests "adopting a national policy for the Right to Disconnect" Right to Disconnect for teachers, which would define times when it is not permitted to send digital tasks or notifications to teachers, especially on weekends and official holidays. AlzahraniAlzahrani, 2024, p. 69 adds that this policy must be accompanied by awareness campaigns for parents and students regarding appropriate times to communicate with teachers through official digital channels

Another important ministry-level strategy, as noted by AlkhalidiAlkhalidi, 2023, p. 141 is "re-engineering", (data entry requirements on the Noor system." Instead of overwhelming teachers with a massive amount of data to be entered daily and weekly, forms could be simplified, required fields reduced, and focus placed only on essential data. AlbalawiAlbalawi, 2024, p. 115 suggests leveraging artificial intelligence technologies (to automatically extract some data without the need for teacher input, such as calculating cumulative absence rates or preparing routine statistical reports. AlenaziAlenazi, 2023, p. 124 calls for "providing centralized technical support that operates around the clock" via phone or instant chat, so that teachers are not left alone

.to face technical problems

,At the school level, school administration can play a pivotal role in alleviating digital stress. Alharbi (Alharbi p. 56) suggests "allocating official time during working hours for teachers to complete digital ,2024) administrative tasks," instead of burdening them with these outside of work hours. As AlmalkiAlmalki, 2023, p. 146 adds, the school could adopt a "digital rotation system," where one or more teachers each week assist () their colleagues with technical tasks on the Noor and Faris systems. AlghamdiAlghamdi, 2024, p. 88 (emphasizes the importance of "psychological and social support" within the school environment, where principals and colleagues can provide moral support and appreciation to teachers who put in extra effort in .dealing with digital systems

Research Methodology

This study adopts theDescriptive Analytical Method as it is appropriate for the nature and objectives of the , study. Winborne and Johnson emphasize that "the descriptive analytical method allows for a deeper "understanding of the complex relationships between technology and human factors in educational contexts)Winborne & Johnson, 2025, p. 5.(

Study Population

,The study population consists of employees in public schools in the (Jeddah) region, including teachers .administrators, and educational supervisors during the second semester of the 2025-2026 academic year

Study Sample

The study sample was randomly selected. Questionnaires were distributed electronically, and 72 valid .responses were retrieved for statistical analysis

The questionnaire items are answered according to a five-pointLikert Scale = as follows: (Strongly Disagree , .with the item, and consequently a higher degree of the impact or trait being measured

Validity of the Questionnaire

Questionnaire validity ensures questions measure their intended constructs; validity was confirmed through .scale validation

Validity of the Scale

First: Internal Consistency

Internal consistency validity measures how well each itemthe questionnaire with the domain to which this item belongs. The researcher calculated the internal consistency of the questionnaire by calculating the .correlation coefficients between each item of the questionnaire domains and the total score of the domain itself "Table (4-1) displays the correlation between each item in the "Smart Administrative Information Systems .domain and its total score. All correlations are significant at $\alpha \leq 0.05$, confirming the domain's validity

Table (4-1): Correlation between "Smart Administrative Information Systems" items and total domain score

Probability) ValueSig(. Pearson Correlation Coefficient	Item	.No	
0.000	.770*	I find that the smart administrative information systems used in the school are easy to learn and use	1.
0.000	.828*	Smart administrative information systems help me complete tasks efficiently	2.
0.000	.777*	Smart administrative information systems provide accurate, reliable data when needed	3.
0.000	.802*	I feel smart administrative systems save me time and effort at work	4.
0.000	.827*	I find smart administrative system interfaces clear and easy to navigate	5.
0.000	.815*	Smart administrative systems enable me to access the information I need quickly	6.
0.000	.584*	I must use multiple different systems and platforms to complete daily tasks	7.
0.000	.652*	The smart administrative systems used in the school integrate well with each other	8.
0.000	.665*	School administration provides quick technical support for system issues	9.
0.000	.685*	Smart administrative systems receive continuous updates that improve performance and add features	10.

* .Correlation is statistically significant at $\alpha \leq 0.05$

Table (4-1) shows the correlation coefficient between each item of the "Digital Stress" domain and the total score of the domain, which indicates that the shown correlation coefficients are significant at the significance level $\alpha \leq 0.05$, and thus the domain is considered valid for what it was designed to measure

Table (4-2): Correlation coefficient between each item of the "Digital Stress" domain and the total score of the domain

Probability) ValueSig(.)	Pearson Correlation Coefficient	Item	.No
0.000	.771*	I feel psychological pressure due to the large number of digital tasks I must complete daily	1.
0.000	.702*	I find it difficult to keep up with smart system updates	2.
0.000	.798*	I feel mentally exhausted after long periods using administrative systems	3.
0.000	.790*	I worry about making data entry errors in administrative systems	4.
0.000	.753*	The high number of electronic platforms distracts me and lowers productivity	5.
0.000	.735*	I find it hard to separate digital work requirements from personal life	6.
0.000	.790*	I feel stressed when systems crash or technical issues occur	7.
0.000	.717*	I believe that the time spent entering data and preparing electronic reports is more than necessary	8.
0.000	.769*	I feel pressured due to the expectation of immediate response to messages and administrative requirements via digital systems	9.
0.000	.660*	I sometimes consider leaving my job due to digital administrative pressures	10.

* .Correlation is statistically significant at $\alpha \leq 0.05$

Questionnaire Reliability :

Questionnaire reliability means that this questionnaire would give the same result if it were redistributed more than once under the same circumstances and conditions. In other words, questionnaire reliability means stability in the questionnaire results and that they do not change significantly if redistributed to the sample members several times over certain periods of time. It was found that the Cronbach's alpha coefficient value) is high, which is 0.853.(

.The researcher verified the study questionnaire's validity and reliability, ensuring it is suitable for data analysis

Normality Distribution Test

The Kolmogorov-Smirnov Test (K-S) .was used to test whether the data follows a normal distribution or not .It was found that the test value is (0.394) and the probability value(Sig.) is 0.998 which is greater than the ,(significance level of 0.05. Thus, the data distribution follows a normal distribution, and parametric tests were .used to analyze the questionnaire data

Statistical methods used

The following statistical tools were used

- 1- .Percentages and frequencies
- 2- .Arithmetic mean and relative weight
- 3- .Cronbach's Alpha test
- 4- Kolmogorov-Smirnov Test (K-S).
- 5- Pearson Correlation Coefficient.
- 6- Independent Samples T Test.
- 7- One-Way Analysis of Variance(ANOVA)

Answering the study questions

Statistical description of sample by demographics 1-5

– :Gender

Table (5-1) shows that 45.8 of the study sample are male, while %54.2 are female %

Table (5-1): Sample distribution by gender

% Percentage	Number	Gender
45.8	33	Male
54.2	39	Female
100.0	72	Total

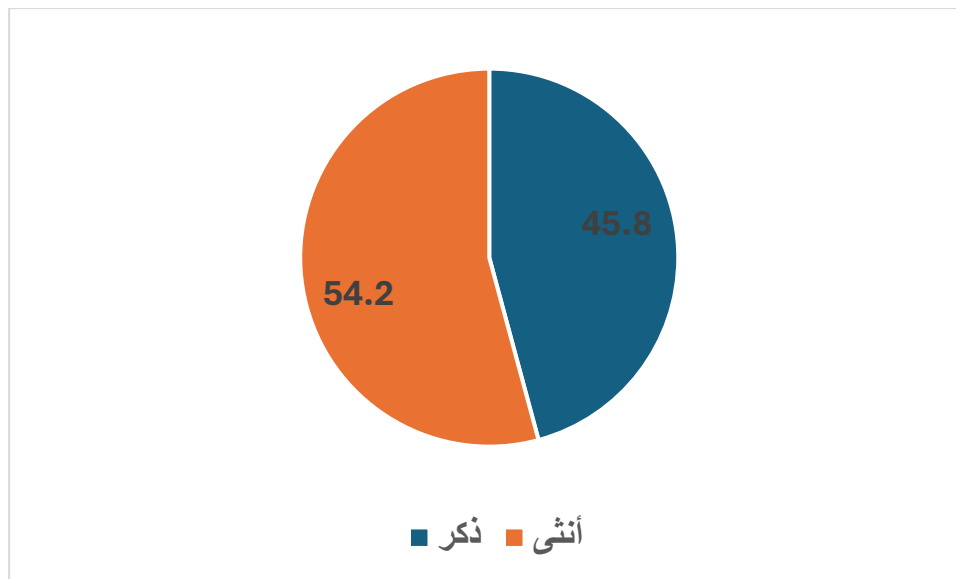


Figure (5-1): Sample distribution by gender

– :Educational qualification

Table (5-2) shows that 6.9% of the study sample hold a diploma, 86.1% hold a bachelor's degree, 5.6% hold a master's degree, while 1.4% hold a doctorate.

Table (5-2): Sample distribution by qualification

% Percentage	Number	Educational qualification
6.9	5	Diploma
86.1	62	Bachelor's
5.6	4	Master's
1.4	1	Doctorate
100.0	72	Total

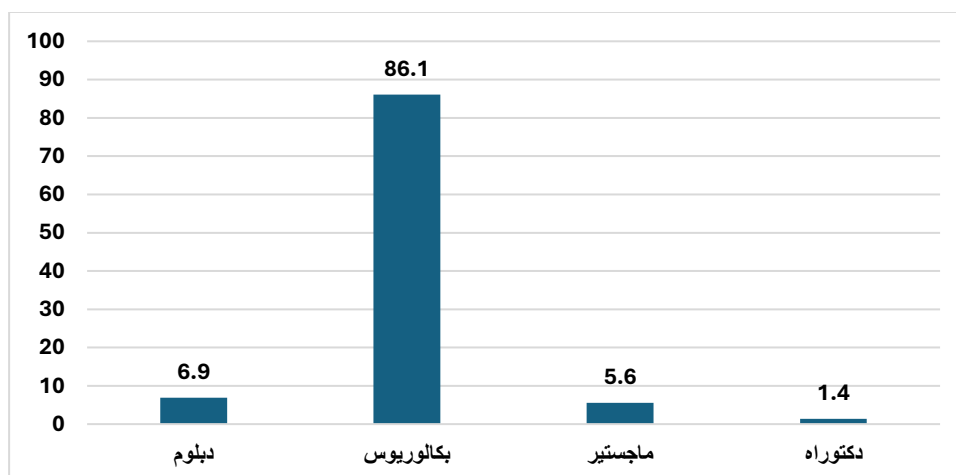


Figure (5-2): Sample distribution by qualification

– :Years of experience in education

Table (5-3) shows that 15.3% of the study sample have less than 5 years of experience, 4.2% have between 5 and less than 10 years of experience, 8.3% have between 10 and less than 15 years of experience, while 72.2% have 15 years or more of experience.

Table (5-3): Sample distribution by years of experience in education

% Percentage	Number	Years of experience in education
15.3	11	Less than 5 years
4.2	3	to less than 10 years

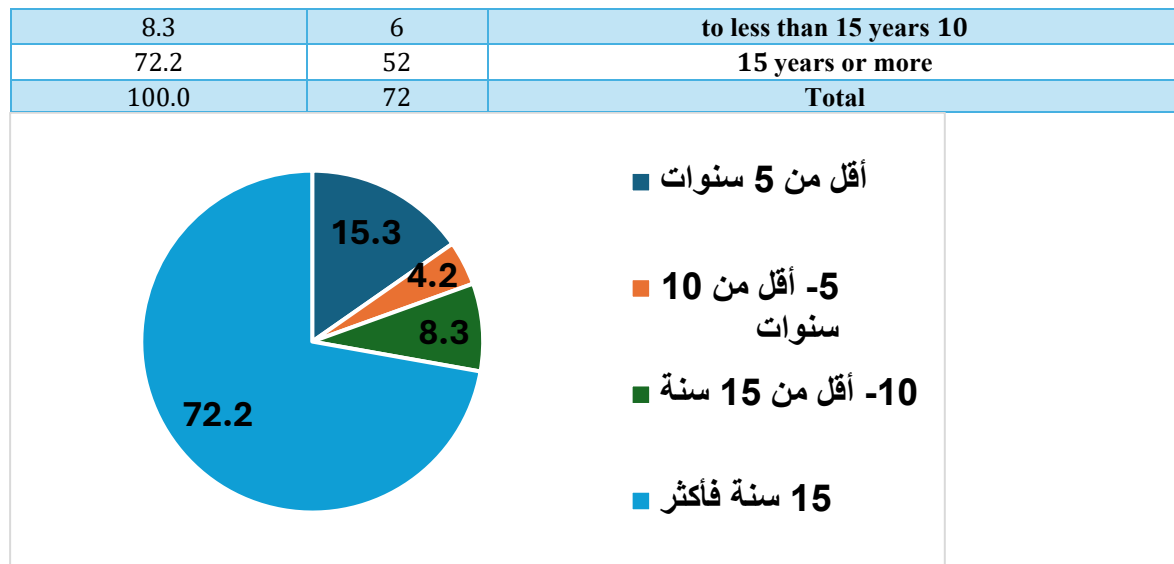


Figure (5-3): Sample distribution by years of experience in education

- :Job title

Table (5-4) shows that 79.2% of the study sample are teachers, 13.9% are administrators, 2.8% are educational supervisors, while 4.2% are principals/deputies.

Table (5-4): Distribution of sample members by job title

% Percentage	Number	Job title
79.2	57	Teacher
13.9	10	Administrator
2.8	2	Educational supervisor
4.2	3	Principal/Deputy
100.0	72	Total

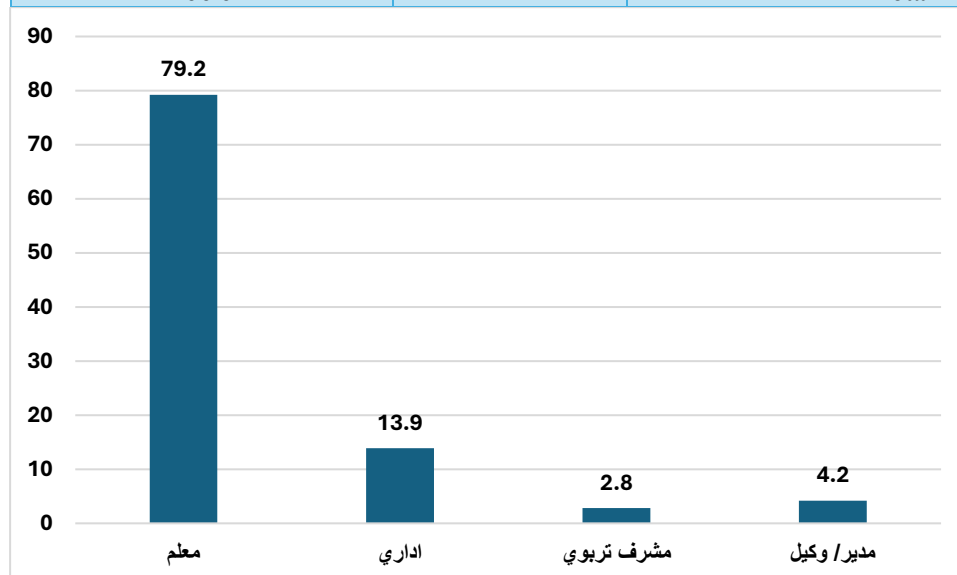


Figure (5-4): Sample distribution by job title

- :Daily hours using digital administrative systems

Table (5-5) shows that 27.8% of the study sample use digital administrative systems for less than two hours daily, 44.4% use them for 2 to less than 4 hours, 18.1% use them for 4 to less than 6 hours, while 9.7% reported using them for 6 hours or more daily.

Table (5-5): Distribution of sample members by number of hours of daily use of digital administrative systems

% Percentage	Number	Daily hours using digital administrative systems
27.8	20	Less than 2 hours
44.4	32	to less than 4 hours 2
18.1	13	to less than 6 hours 4
9.7	7	hours or more 6
100.0	72	Total

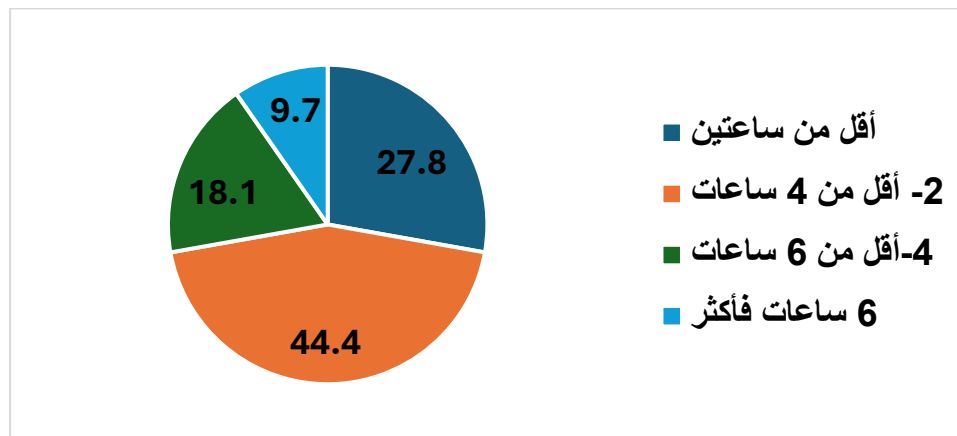


Figure (5-5): Distribution of sample members by number of hours of daily use of digital administrative systems

Answering study questions 2-5

– What is the level of use of smart management information systems in public schools from the perspective of employees

Table (5-6): Level of use of smart management information systems in public schools from the perspective of employees

Rank	Relative weight	Standard deviation	Arithmetic mean	Item	.No
5	81.67	0.75	4.08	I find that the smart administrative information systems used in the school are easy to learn and use	1
4	84.44	0.74	4.22	Smart administrative information systems help me complete tasks efficiently	2
3	85.00	0.69	4.25	Smart administrative information systems provide accurate, reliable data when needed	3
1	87.22	0.68	4.36	I feel smart administrative systems save me time and effort at work	4
6	81.67	0.75	4.08	I find smart administrative system interfaces clear and easy to navigate	5
2	86.11	0.66	4.31	Smart administrative systems enable me to access the information I need quickly	6
7	77.78	0.90	3.89	I must use multiple different systems and platforms to complete daily tasks	7
9	74.72	0.93	3.74	The smart administrative systems used in the school integrate well with each other	8
10	74.44	0.98	3.72	School administration provides quick technical support for system issues	9
8	77.22	0.86	3.86	Smart administrative systems receive continuous updates that improve performance and add features	10
	81.03	0.56	4.05	All items combined	

Table (5-6) shows that the arithmetic mean for all items is 4.05 meaning the relative weight is 81.03%. This , indicates that the sample members agree with the items in this domain at a rate of 81.03%. The item "I feel that smart administrative systems save my time and effort at work" received the highest level of agreement at 87.22 while the item "The school administration provides quick technical support when encountering ,% technical problems" received the lowest level of agreement at 74.44. %

– ?What is the level of digital stress among public school employees

Table (5-7): Level of digital stress among employees in public schools

Rank	Relative weight	Standard deviation	Arithmetic mean	Item	.No
4	73.61	0.96	3.68	I feel psychological pressure due to the large number of digital tasks I must complete daily	1
9	61.67	1.04	3.08	I find it difficult to keep up with smart system updates	2
3	74.44	0.98	3.72	I feel mentally exhausted after long periods using administrative systems	3
5	70.83	1.14	3.54	I worry about making data entry errors in administrative systems	4
1	76.11	0.96	3.81	The high number of electronic platforms distracts me and lowers productivity	5
8	65.56	1.13	3.28	I find it hard to separate digital work requirements from personal life	6
2	75.28	1.01	3.76	I feel stressed when systems crash or technical issues occur	7
7	68.33	1.00	3.42	I believe that the time spent entering data and preparing electronic reports is more than necessary	8
6	70.56	0.95	3.53	I feel pressured due to the expectation of immediate response to messages and administrative requirements via digital systems	9
10	54.17	1.18	2.71	I sometimes consider leaving my job due to digital administrative pressures	10
	69.06	0.77	3.45	All items combined	

From Table (5-7), it is evident that the arithmetic mean of all items is 3.45, meaning the relative weight is 69.06%. This indicates that the sample members agree with the items in this domain by 69.06%. The item "I feel that the large number of electronic platforms distracts my focus and reduces my productivity" received the highest level of agreement at 76.11 while the item "I sometimes think about leaving work due to digital stress associated with administrative systems" received the lowest level of agreement at 54.17%.

– ?Is there a significant relationship between smart administrative systems and digital stress

Table (5-8): Relationship between smart systems and employee digital stress

Probability Value(Sig.)	Pearson Correlation Coefficient	
0.472	-0.008	Relationship between smart administrative systems and employee digital stress

Table (5-8) shows a correlation of

-0.008 and a Sig value of .0472 exceeding the .05 level. This indicates no statistically significant relationship between smart administrative systems and employee digital stress

– Are there statistically significant differences in the level of digital stress based on demographic variables (gender, educational qualification, years of experience, job title, number of hours of daily use of digital administrative systems)

:This question branches into these sub-questions

– ?Are there statistically significant digital stress differences by gender

Table (5-9): Results of the "Independent Samples T-test" – Gender

Significance Level	t-value	Standard deviation	Arithmetic mean	Number	Gender	
0.110	-1.621	0.79	3.29	33	Male	Digital Stress Level
		0.74	3.59	39	Female	

From the results shown in Table (5-9), it is evident that the probability value(Sig.) corresponding to the Independent Samples T-test" is greater than the significance level of"0.05 Thus, it can be concluded that .there are no statistically significant differences between the study sample's mean ratings attributable to gender

– **?Are there statistically significant digital stress differencesby educational qualification**

Table (5-10): Results of the "One-Way ANOVA" test – Educational Qualification

Significance Level	"F-" value	Mean Square	Degrees of Freedom	Sum of Squares	
0.300	1.245	0.738	3	2.213	Digital Stress Level
		0.592	68	40.287	
			71	42.499	

From the results shown in Table (5-10), it is evident that the probability value(Sig.)corresponding to the "One-Way ANOVA" test is greater than the significance level of0.05 Thus, it can be concluded that there are no .statistically significant differences between the study sample's mean ratings attributable to educational .qualification

– **?Are there statistically significant digital stress differences by years of experience**

Table (5-11): Results of the "One-Way ANOVA" test – Years of Experience

Significance Level	"F-" value	Mean Square	Degrees of Freedom	Sum of Squares	
0.272	1.329	0.784	3	2.353	Digital Stress Level
		0.590	68	40.146	
			71	42.499	

From the results shown in Table (5-11), it is evident that the probability value(Sig.)corresponding to the "One-Way ANOVA" test is greater than the significance level of0.05 Thus, it can be concluded that there are no .statistically significant differences between the study sample's mean ratings attributable to years of experience

– **?Are there statistically significant differences in the level of digital stress based on the job title variable**

Table (5-12): Results of the "One-Way ANOVA" test – Job Title

Significance Level	"F-" value	Mean Square	Degrees of Freedom	Sum of Squares	
0.389	1.021	0.610	3	1.831	Digital Stress Level
		0.598	68	40.668	
			71	42.499	

From the results shown in Table (5-12), it is evident that the probability value(Sig.)corresponding to the "One-Way ANOVA" test is greater than the significance level of0.05 Thus, it can be concluded that there are no .statistically significant differences between the study sample's mean ratings attributable to job title

– **Are there statistically significant digital stress differences based on daily hours of using digital ?administrative systems**

Table (5-13): Results of the "One-Way ANOVA" test – Number of hours of daily use of digital administrative systems

Significance Level	"F-" value	Mean Square	Degrees of Freedom	Sum of Squares	
0.918	0.168	0.104	3	0.312	Digital Stress Level
		0.620	68	42.187	
			71	42.499	

From the results shown in Table (5-13), it is evident that the probability value(Sig.)corresponding to the "One-Way ANOVA" test is greater than the significance level of0.05 Thus, it can be concluded that there are no .statistically significant differences between the study sample's mean ratings attributable to the number of hours

.of daily use of digital administrative systems

Results and Recommendations

- There is an agreement among the sample members regarding the items in the field of the level of use of smart management information systems in public schools from the employees' perspective at a rate of 81.03%. The item "I feel that smart management systems save my time and effort at work" received the highest level of agreement at 87.22 while the item "the school administration provides rapid technical support when facing technical problems" received the lowest level of agreement at 74.44.%
- There is an agreement among the sample members regarding the field of the level of digital stress among employees in public schools at a rate of 69.06%. The item "I feel that the large number of electronic platforms distracts my focus and reduces my productivity" received the highest level of agreement at 76.11 while the item "I sometimes think about leaving work due to digital pressures associated with administrative systems" received the lowest level of agreement at 54.17.%
- No statistically significant relationship between smart management systems and employee digital stress
- No statistically significant differences in mean ratings attributable to gender
- No statistically significant differences in mean ratings attributable to educational qualification
- No statistically significant differences in mean ratings attributable to years of experience
- No statistically significant differences in mean ratings attributable to job title
- There are no statistically significant differences between the averages of the study sample's estimates attributable to the number of hours of daily use of digital administrative systems

Second Conclusion and Recommendations

- Enhancing technical support in schools: Given that the lowest agreement rate in the field of smart management information systems was for the item related to rapid technical support (74.44%), it is recommended to provide specialized and responsive technical support teams within schools, while establishing direct communication channels to resolve technical problems
- Simplifying electronic platforms and reducing their multiplicity: Since the highest agreement rate in digital stress was for the item "the multiplicity of platforms distracts focus and reduces productivity" (76.11%), it is recommended to unify the administrative platforms used as much as possible, and to train employees on one integrated system to reduce mental burden
- Promoting the positive aspects of smart systems: Since the highest-rated item in smart systems was "saves time and effort" (87.22%), it is recommended to continue developing this feature and to raise awareness about the benefits of smart systems to increase employee acceptance
- Reviewing digital pressures despite the absence of a statistical relationship: Although there is no significant relationship between smart systems and digital stress, the rate of digital stress reached 69.06%, which calls for the design of awareness programs to deal with digital pressures, with a focus on supporting employees who are thinking of leaving work due to these pressures (54.17%)
- Generalizing policies without demographic discrimination: Given that there are no significant differences attributable to gender, qualification, experience, job title, or hours of use, it is recommended to apply technical support policies and the reduction of platform multiplicity uniformly to all employees, without the need for different programs based on these variables

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