

# An Empirical Study into the Effects of Electronic Monitoring on Employees in Bangladesh

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## Abstract

The global adoption of electronic monitoring with integrated AI for surveillance is increasing. More empirical studies on its application, especially in the context of developing nations, are needed. This study investigates the utilization of the application in Bangladesh and its impact on employees. It integrates the panopticon model and involves two stages of data collection, with the participation of 37 employees from three private universities in the first round and two case studies in the final round. The research outcomes revealed a few forms of usage applications. One of the case studies' findings was presented in this paper. The research revealed and explained panopticon effects captured at the individual level of social actors framed in an electronic panopticon setting. Varying perspectives were found regarding how effective electronic monitoring enhances work motivation. The observed panopticon effects were contingent upon a foundation of trust between the social actors—employees and management—regarding the technology being used and the mutual benefits gained. The extended panopticon model with refined conceptualizations is adaptable to explain the complex dynamics of behavior in the workplace. The research has managerial and policy implications for organizations operating in a country with a different surveillance culture than a Western-oriented workplace.

**Keywords:** Electronic Monitoring, Bangladesh, Panopticon, University, Governance

## Introduction

There has been a notable global surge in the adoption of various technologies and systems, including those encompassing advanced artificial intelligence (AI) functionalities, to facilitate organizational surveillance and monitoring. The experience dealing with the COVID-19 pandemic has further compelled organizations to intensify their use of these technologies. It was observed that the global demand for surveillance and monitoring systems and technology increased by 108% in 2020 than in 2019 (Ball, 2021). Surveillance, as a pervasive practice, entails collecting personal data and subsequent processing in searchable databases, resulting

in increased administrative efficiency, which can also extend to globalized cooperative schemes, such as the sharing of biometric data (Ball, 2021). Surveillance in the workplace refers to the use of ICTs as well as other methods to exert disciplinary control, where such process will involve the monitoring and supervision of employee behavior by supervisors, who evaluate whether subordinates' actions align with established organizational norms (Sewell et al., 2012). Electronic monitoring is achieved through reconfiguring ICTs being applied at the workplace in the organizational surveillance practice. The approach has been recognized as an effective intervention measure for achieving particular organizational objectives.

Because of the advancement of ICTs and their innovative capabilities, electronic monitoring applications have grown in favor of today's organizations. Managers and authorities might use these technologies and systems to acquire general information and statistics about employees' behaviors, performances, and personal traits (Stanton & Weiss, 2000; Bain & Taylor, 2000). Most organizations, including those in developing nations, are increasingly embracing electronic monitoring applications and relying on these technologies to monitor and supervise employee productivity and performance at work. From an ethical and legal standpoint, there has been calls for more research to prioritize the appropriate use of electronic monitoring and its methodologies, together with establishing governance and policy rules. Such focus is considered more important than participating in discussions centered only upon the moral and immoral aspects and the adverse consequences of electronic surveillance (George, 1996; Alder, 1998; Martin & Freeman, 2003).

There is a significant lack of empirical studies in the literature regarding management approaches and governance frameworks related to workplace monitoring practices in an organization setting situated in developing and underprivileged nations. A number of these nations deploy surveillance extensively in response to national concerns, including rising crime rates, terrorism, natural disasters, and ongoing epidemic health crises. Most research studies on the effects of electronic surveillance and monitoring concentrate on developed nations and hence have limited practical relevance and value for managers, practitioners, and policymakers in countries such as Bangladesh and others with similar surveillance and monitoring approaches. Moreover, certain theoretical shortcomings must be resolved when employing a panopticon model to examine the effects of electronic surveillance and monitoring technologies on employees, which are believed to result in organizational outcomes. Jeremy Bentham initially conceived the Panopticon concept for prison design which was later expanded upon by the acclaimed French philosopher Michel Foucault as an adaptable model that may be applied to various institutional contexts. The current literature mainly emphasizes advanced nations and Western employment contexts, which have influenced the formation of panopticon conceptualizations. Such a focus may limit the adaptability of the panopticon model.

Therefore, this study aims to fill these knowledge gaps by investigating the implementation of electronic monitoring in organizations in Bangladesh and its effects on employees. The study delves into the impact of technology on employees' work performance and social relationships, where it views employees and management as social actors that influence the effects. This research aims to draw significant insights from the analysis on the management shortcomings, as revealed by the research findings, in effectively managing both the intended and unintended consequences of electronic monitoring. This study extends the works by Botan and McCreddie (1990), Botan (1996) and Botan and Vorvoreanu (2005) in their theoretical framework employing panopticon principles and assumptions for research related to organizational surveillance and monitoring. The outcomes from this study garner

valuable insights about electronic monitoring applications in the work environment of academic staff affiliated with three private universities in Bangladesh. This research reported findings from one of the case studies, which indicated noticeable panopticon effects captured at the individual level of social actors framed in an electronic panopticon setting. These insights can be of great importance to university administrators, policymakers, and business practitioners in general.

This paper is structured as follows: The next section provides a relevant literature review and analysis. Then, the extended panopticon model used to guide this qualitative study is explained. Following that, a research design incorporating two stages of data collection for this study, which were carried out between 2020 and 2021, is presented. The findings of the research are then reported and discussed further. This paper concludes by highlighting the theoretical contributions of the research, practical and policy implications, and recommendations for future studies to address the study's limitations.

## **Literature Review**

### ***Electronic Monitoring Uses in Organizations and Ongoing Controversies***

Electronic monitoring applications are employed for organizational monitoring and surveillance to gather data automatically and systematically on employees' related work behaviors. This includes monitoring their previous activities and generating reports on a regular basis, such as daily, monthly, or periodically, for the purpose of reporting (Tabak & Smith, 2005). The utilization of various ICTs and innovative technologies to generate detailed employee data such as RFID, biometric systems, implantable microchips devices, wearable tools, satellite GPS tracking tools and advanced software features with algorithmic profiling has become prevalent in the application of electronic monitoring in organization (Samaranayake & Gamage, 2012; Swartz, 2021; Ball, 2021; Hickok & Maslej, 2023). In certain instances, employees may remain unaware of the extent to which they are being monitored through the utilization of these platforms (George, 1996; Bassick et al., 2012; Samaranayake & Gamage, 2012).

The increasing utilization of electronic monitoring, that also includes advanced applications embedded with the AI capabilities in the workplace, for the purpose of employee monitoring has generated persistent concerns and ongoing debates. Many controversies surrounding electronic monitoring implementation have been highlighted in the news and discussed in the literature. Barclays in the UK used monitoring software to monitor its employees' online behavior, including documenting the duration of employees' presence at their workstations and issuing notifications during prolonged breaks (BBC News, 2020). The organization faced public criticism and scrutiny after the media exposed the monitoring practice. Based on a 2019 survey report released by the American Management Association (2019) involving 304 organizations in the United States, it was found that more than a quarter of employers terminated their employees as a result of improper email usage, while over a third took similar disciplinary measures for the misuse of the internet (American Management Association, 2019). Concurrently, it was shown that a significant proportion of these organizations (about 65%) utilized software solutions to implement access controls on specific information or websites within their organizational framework (American Management Association, 2019). In another survey report released by Gartner in 2019 encompassing 239 large corporations, it was revealed that more than 50% of these organizations have implemented non-traditional monitoring methods within their workplace

using technologies (Kropp, 2019). This signifies a notable increase compared to the 30% reported in the survey findings of 2015.

Another noteworthy viewpoint to highlight here from the practitioner setting are legal perspectives commentaries by Lazar and Yorke (2023) recently published by Thomson Reuters. Both attorneys emphasized the growing concerns about the use of electronic monitoring with AI capabilities in the workplace such as supporting human resource management for job applicant screening, apart from employee monitoring. They asserted that there are two major shortcomings in the AI capabilities used in electronic monitoring for employment decision-making that have the potential to spark not only ethical concerns but also legal consequences. AI lacks ethical standards and a moral compass; it does not make itself apparent to regular managers or professionals who engage with the technology (Lazar & Yorke, 2023).

### ***The Implications of Electronic Monitoring on Employees***

Electronic monitoring applications are perceived as effective interventions for monitoring employee productivity and performance. These applications possess features that enhance the element of control, which is undoubtedly crucial for organizational management and authorities in effectively supervising and leading teams and employees. The advanced of AI capabilities incorporated into electronic monitoring applications can intensify the comprehensive capture of employee social behavior, resulting in the creation of detailed performance records for profiling purposes, in which attainable through the variety methods of capturing such data (Stanton, 2000; Bain & Taylor, 2000; Mateescu & Nguyen, 2019; Ravid et al., 2020; Hickok and Maslej, 2023).

The monitoring approach to electronic monitoring in today's organizational settings is a multifaceted phenomenon, as the technology, with its sophisticated hardware and software design, has been recognized as a multidimensional technology (Ravid et al., 2020). The term "computer-based monitoring" gained popularity in the early stages of technology implementation. It refers to collecting data on employee performance through searchable computer files, email, and telephone calls; this monitoring practice typically occurs without the employees' awareness or consent (George, 1996). In literature, electronic monitoring to assess employee performance is commonly known as electronic performance monitoring, or EPM (Stanton, 2000; Ravid et al., 2020). In this study, EPM is viewed as integrating several ICTs that are reconfigured to develop an electronic monitoring system or platform with specific technological features that enable the collection of employee performance data for further analysis. This form of electronic monitoring can be integrated with various monitoring tools and methods that serve different purposes for surveillance and monitoring. Numerous studies have presented evidence of how organizations could use this form of electronic monitoring to monitor employee productivity and work performance in order to gain detailed data on employee performance, behavior, and individual characteristics for further performance analysis (Al-Rjoub et al., 2008; Ravid et al., 2020; Stanton & Weiss, 2000). According to the findings presented by Ravid et al. (2020) in a systematic review of the literature that included 124 empirical studies, most organizations utilize this type of monitoring for at least four purposes.

The first reason is to assess performance, reduce losses, and increase profits by employing electronic monitoring to incentivize and compensate employees for their performance and accomplishments while discouraging unproductive and undesirable work behaviors (Ravid et al., 2020). Within the framework of organizational norms and practices,

employee performance management involves a range of managerial activities, including planning, monitoring, developing, rating, and rewarding (Al-Rjoub et al., 2008). Electronic monitoring has advanced capabilities to provide managers or supervisors with data on employee performance, work behavior, and individual characteristics (Al-Rjoub et al., 2008; Hickok & Maslej, 2023). This technology can significantly automate supervisory tasks, particularly when integrated with advanced software programs that utilize algorithms and sentiment analysis (Mateescu & Nguyen, 2019; Ball, 2021). Aside from the well-known intended and unintended effects of this monitoring method, electronic monitoring applications will significantly affect supervisory relationships and interactions as they become more common in the workplace. Technology use was widely reported to affect trust and social relationships significantly (Beckhaus, 2019; Ball, 2021; Kalischko & Riedl, 2021). Expanding the scope of electronic monitoring functions in monitoring employee performance, such as monitoring communications using sentiment analysis, can challenge existing levels of control, autonomy, and trust in the organization, leading to undesirable outcomes experienced by employees (Ball, 2021). There were conflicting findings in the literature regarding the organizational impact of electronic monitoring of employee performance (Backhaus, 2019; Kalischko & Riedl, 2021).

The second reason is to facilitate employee development, growth, and training by enabling constructive feedback in the supervision and team collaboration settings and identifying employee strengths and weaknesses, thereby aiding in their gradual acquisition of skills (Ravid et al., 2020). In this context, several studies have discovered positive and significant relationships with employee performance outcomes (Ravid et al., 2020). The employees in the workplace accept the reconfigured ICTs for electronic monitoring systems, which promote autonomy, workplace flexibility, and access to information (Al-Rjoub et al., 2008).

The third reason is administrative and safety concerns, where electronic monitoring is necessary to mitigate potential risks and protect employees and organizations, mainly when dealing with legal and civil liability (Ravid et al., 2020). Technology is crucial in assisting companies and employers in addressing and resolving issues such as sexual harassment, malpractices, and legal conflicts (Martin & Freeman, 2003). Based on a thorough review of the literature in this field by Ravid et al. (2020), what is noteworthy to highlight from the perspective of performance context is the use of electronic monitoring that can affect the well-being of both organizations and employees. For example, employees benefit from using wearable devices for health monitoring in specific work situations because it reduces occupational dangers and consequently has a favorable effect on employees (Ravid et al., 2020).

The fourth reason pertains to surveillance and authoritarianism, where collecting specific employee performance data occurs without explicit justification and typically results in adverse employee outcomes (Ravid et al., 2020). These consequences include reduced perceptions of fairness and justice, decreased workplace satisfaction and mood, and heightened stress levels (Ravid et al., 2020). According to Tenney et al (2016), much literature indicates that a stressful work environment contributes to increased unhappiness among employees, accumulating negative emotions and ultimately resulting in job dissatisfaction. Furthermore, the lack of a clear and justifiable justification for the monitoring method will likely provoke ethical issues and concerns. The ethical ramifications and issues related to the use of electronic surveillance have been in-depth examined by many past studies. Research has documented that employers may notify their employees regarding surveillance;

nonetheless, they seldom reveal the magnitude and scope of monitoring activities (Bassick et al., 2012).

### ***An Overview about Bangladesh and Surveillance Culture***

Bangladesh, with a population above 170 million, is now ranked as the world's 8th most densely populated country (Worldometer, n.d.). The country is well known for its extensive implementation of surveillance measures to address persistent national security challenges and concerns, including rising crime rates, which have led to a burgeoning market for surveillance and monitoring equipment (Sohel, 2022). In addition, the country is also grappling with the ongoing health crisis, natural disasters, climate change impacts, terrorism threats, and Rohingya refugee crises that necessitate national surveillance measures at the broader scale of practices such as using CCTV cameras, biometric applications, and other electronic surveillance and monitoring technologies (Ahmed et al., 2017; Mahamudul & Salahudin, 2019; Chowdhury et al., 2021; Rana & Riaz, 2022).

The Digital Bangladesh vision, presented by Prime Minister Sheikh Hasina on December 12, 2008, has propelled Bangladesh's advancement towards extensive digitalization (Chowdhury, 2021). The objective is to propel Bangladesh's progress in service delivery through the utilization of ICTs, enhance the capacity of the entire society to transition towards a knowledge-based economy, and expand the range of exported goods to include knowledge-based products (Chowdhury, 2021). Within the education sector, the government has increased its efforts to develop ICTs infrastructure and resources with the support of multiple international agencies to achieve Sustainable Development Goal 4, which focuses on ensuring quality education within the country's education systems. The National Education Policy of 2010 and the Bangladesh Digital Vision, in particular, have influenced the educational landscape at various stages of implementation, including the implementation of Access to Information (a2i) programs by the government and also have received funding from the United Nations Development Program and the United States Agency for International Development (Alam et al., 2023). Through the University Grants Commission (UGC) role, the government also mobilized the deployment of Integrated University Management Systems (IUMS) at selected higher education institutions to expand digitization efforts.

From the context of national surveillance culture, Dhali et al. (2020) described some examples of excessive government surveillance in Bangladesh, such as the formation of an independent institution, the Bangladesh Computer Security Incident Response Team (BDCSIRT), by the government to monitor social networking activities and other subversive online activities. They urged the Bangladesh government to take proactive steps to enhance the whole legislative and regulatory framework in Bangladesh, especially those that govern various sectors such as ICTs. Given the growing digitization in the context of the Digital Bangladesh vision, Dhali et al. (2020) argue that there is a pressing need to enact new legislation about data privacy that can be effectively enforced in both the private and public sectors.

According to a recent study by Islam (2022), Bangladesh still lacks comprehensive privacy or data protection legislation like the Privacy Act 1974 in the United States, the Privacy Act 1988 in Australia, the Personal Data Protection Act 2010 in Malaysia, the Data Protection Act 2018 in the United Kingdom, or the EU General Data Protection Regulations 2018 (GDPR). According to Islam (2022), the recognition of privacy in the Constitution is contingent upon certain conditions; it is a right subject to various reasonable limitations, including safeguarding national security, maintaining public order, preserving public morality, and

protecting public health. In alignment with the Digital Bangladesh vision, the 2022 Draft Data Protection Act (DPA), released recently, marked the country's first proposed legislation concerning data privacy and it has impact on data processing, storage, and transfer (Weymouth, 2023).

## **Methodology**

### ***Theoretical Underpinnings and Research Framework***

This study employs panopticon concepts and principles as the central theoretical basis for the research. Jeremy Bentham first described the panopticon, and Michel Foucault later expanded on it. A substantial body of research, inspired by the works of Jeremy Bentham and Foucault (1977), has focused on investigating the panopticon effects of electronic monitoring in organizational settings. Zuboff (1988) argued that introducing information technology in the workplace can establish a panopticon-like atmosphere that impacts managers and employees. The term "electronic panopticon" is used as a metaphor to depict an environment that resembles the panopticon created by reconfigurable ICTs for electronic monitoring (Botan, 1996; Bain & Taylor, 2000; Botan & Vorvoreanu, 2005; Manokha, 2020).

Botan (1996) contended that modern surveillance and monitoring technologies can transform physical operations, processes, and structures into virtual environments in the electronic panopticon environment. This shift enables the enforcement of coercive and reward-based relationships, regardless of whether employees are working in a virtual or physical panopticon setting. The advancement of technology makes it possible to align the supervisory work activities and behaviors of employees working in the virtual realm of an electronic panopticon with those of employees in a physical panopticon setup (Botan, 1996).

This study applied the panopticon model and related principles introduced by Botan and McCreadie (1990) and further expanded in subsequent studies by Botan (1996), Botan and Vorvoreanu (2005) to examine the impacts of electronic monitoring in the organization context. Their panopticon model suggests the inclusion of four elements to enable the capture of panopticon effects in an electronic work environment. The essential prerequisites for achieving panopticon effects are as follows: (1) employees must possess some form of awareness of being subject to monitoring; (2) there must be technological features capable of monitoring; (3) management policy must be established; and (4) there is a process of maturation. The model was used in an empirical research design to highlight the approaches by which panopticon effects might be observed and explained in an electronic panopticon environment in later investigations done by Botan (1996) and subsequently reported by Botan and Vorvoreanu (2005). The panopticon effects refer to the perceived level of control exerted on an employee through electronic monitoring and surveillance technologies in an electronic panopticon environment (Botan & McCreadie, 1990; Botan, 1996). This view stems from the employee's internal recognition of their vulnerability within the electronic panopticon environment due to specific attributes of the technology being utilized, which create the difference between being seen (visibility) and not being seen (invisibility), significantly impacting their work behavior.

Nevertheless, an additional limitation of the current model that requires modification is its inability to clearly articulate the panopticon effects, both positive and negative, as organizational outcomes resulting from the interplay between employees, supervisors, and the utilization of electronic monitoring applications. Therefore, to address this theoretical limitation in their panopticon paradigm, additional conceptualizations are proposed in this research.

This study recognizes two important social actors, namely employees, and management, who actively participate in an organization's social and work environments. These actors significantly impact the emergence of organizational norms and standards. Social actors refer to individuals with autonomy who can make independent judgments and exhibit voluntary behavior that enables them to be held responsible for their choices (King et al., 2010). Within the organizational context, employees have capacities in this area as they are individuals employed by an organization and are impacted by electronic monitoring applications. This study highlights the significance of management as a social actor, elucidating their proactive involvement in social interactions, business operations and processes, and workplace dynamics that shape power elements and control, ultimately impacting employees. This social actor category comprises individuals and groups who occupy managerial positions and wield authority. They are directly or indirectly engaged in developing, implementing, and maintaining managerial policies pertaining to surveillance and monitoring within an organizational setting. Employees and management can impact and be impacted by the organizational environment through their proactive actions, decisions, and relationships with others, as well as their interactions with surveillance and monitoring technology. These individuals play a crucial role in demonstrating the panopticon effects since they have a certain level of knowledge and awareness of being monitored in an electronic panopticon setting.

In addition, the propositions by D'Urso (2006) to strengthen the panopticon model developed by Botan and McCreadie (1990) were also considered in this research. D'Urso (2006) recommendations regarding the policy restrictiveness level, including policy perspectives, timeliness, and comprehensiveness were integrated in the assumptions within the research framework.

### **Research Design and Sampling Strategy**

A research design addresses a logical challenge and can be seen as a plan of action for research that prioritizes addressing four areas of concern: which questions to investigate, which data is pertinent, which data to gather, and how to analyze the findings (Yin, 2003). It is a strategic framework that outlines the steps and methods required to progress from a starting point, consisting of a series of questions to be addressed, to a desired outcome, encompassing a collection of conclusive answers (Yin, 2003). Flick (2004: 146-147) outlines the essential components when designing a qualitative study. These include the research objectives, its theoretical framework, specific research questions, selection of empirical data, methodologies, and procedures, standardized and control level, the aims for generalization, and the available temporal, personal, and material resources.

The study specifically examined private higher education institutions due to the growing number of private universities in Bangladesh compared to public universities. A purposive sampling strategy was employed to collect the data for the research. This sampling strategy is adaptable and can be tailored according to the research objectives and questions outlined for the study and based on a predetermined set of criteria established for selecting case studies and participants, as guided by the research framework (Campbell et al., 2020). Moreover, this sampling strategy can be considered highly pragmatic for addressing circumstances during the challenging COVID-19 pandemic when movement and in-person encounters are restricted. By employing this sampling approach, a researcher can rely on available resources within their reach, including recruiting respondents or research



participants who are highly likely to provide relevant and valuable information (Campbell et al., 2020).

Further, during the pandemic COVID-19 time frame of 2020 to 2021, all universities in Bangladesh had to abide by series of the government mandates to temporarily close their campuses to reduce disease transmission and relocate academic activities online. Consequently, the most feasible subset of the research participants to sample university personnel impacted by electronic monitoring primarily comprises employees who are part of the faculty academic members. One of the reasons for this decision is attributed to their role in facilitating online classes and their convenient utilization of virtual meeting platforms, which can permit online meeting sessions to be scheduled with them. Therefore, the recruitment of participants representing the group as employees for this study was limited exclusively to academic faculty members affiliated with the universities involved in the research. However, the researcher has extended the recruitment of the research participants to others in both the academic and administrative personnel groups to represent the voices of the management and authority as active social actors.

### ***First Stage of Data Collection and Selected Findings***

The first round of data collection was conducted between June and September 2020, employing an online survey method. This data collection stage aims not to test hypotheses but rather to gather early data to make well-informed decisions regarding executing the case study method. Prior to conducting the survey, consent was obtained from the management of three universities in Bangladesh to enlist their academic personnel as potential participants. Table 1 presents the distribution of survey respondents from these private universities. A total of thirty-seven (37) participants, comprising twenty-four (24) males and thirteen (13) females, took part in the study. The survey was conducted with the participation of sixteen (16) academic staff from BPU and nine (9) from BPW. The remaining twelve (12) participants are affiliated with BPV. Table 2 presents the survey components and questions were constructed using guidelines from various literature sources.

Table 1  
*Distribution of Survey Respondents*

<b>ORGANIZATIONS</b>	<b>RESPONDENTS</b>
PRIVATE UNIVERSITY 1 (BPW) - ESTABLISHED IN 1995	9
PRIVATE UNIVERSITY 2 (BPV) - ESTABLISHED IN 1995	12
PRIVATE UNIVERSITY 3 (BPU) - ESTABLISHED IN 2003	16
<b>TOTAL SURVEY RESPONDENTS</b>	<b>37</b>

Table 2  
*Survey Components and Questions*

<b>Component</b>	<b>Details components</b>
<b>Demographic</b>	(1) Designation; (2) Education Background/Technical Qualification; (3) Years of Work Experience; (4) Years of Working at the Present University
<b>Technology Adoption</b>	1. Please tell me what you know about the electronic monitoring system. 2. Are you familiar with any electronic surveillance tools in your organization?

3. Are you aware that your organization electronically monitors your work? If yes, then how is it monitored?
4. How often does your organization electronically monitor your work?
5. What do you think is the reason your organization adopted electronic monitoring techniques?
6. What do you think about the electronic monitoring system's accuracy?
7. How do you compare traditional monitoring with e-monitoring?
8. How do you explain your supervisor's technical knowledge and experience with the e-monitoring procedure?
9. Please share your thoughts about the professionalism of the IT department in your organization.
10. Would you like to share your experience using electronic surveillance?
11. What is your view of electronic monitoring for academicians on ethical grounds?
12. How does it impact your performance because of such monitoring practice?
13. What are the procedures to express your opinions and feelings concerning this system to your management?
14. What do you think about how the academic staff's performance affects the higher educational institute's productivity or goal?
15. How far can the electronic monitoring system apply for performance evaluation in the higher education sector?
16. Do you think an electronic monitoring system is appropriate for an industry like the higher education sector?

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**Other Views** If there is anything else, you would like to share about your experiences/suggestions with electronic monitoring for higher education institutes.

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Figure 1 depicts the demographic profiles of the survey respondents. The age cohort ranging from 41 to 50 years exhibits the highest number of respondents, constituting a majority of 41%. The remaining distributions can be summarized as follows: 16% of the population falls into the age group below 30 years old, while 27% belong to the age group spanning from 41 to 50 years old. Furthermore, it is worth noting that 16% of the total population belongs to the age bracket encompassing those aged 50 years and beyond. As for the academic designation, the academic staff members' ranks are distributed as follows: three (3) professors, six (6) associate professors, seventeen (17) assistant professors, one (1) senior lecturer, and ten (10) junior lecturers. Among the surveyed participants, a subset of twenty-six (26) individuals indicated possessing a master's degree, while four (4) individuals revealed holding a PhD as their highest education level. The remaining seven (7) respondents disclosed possessing a bachelor's degree.

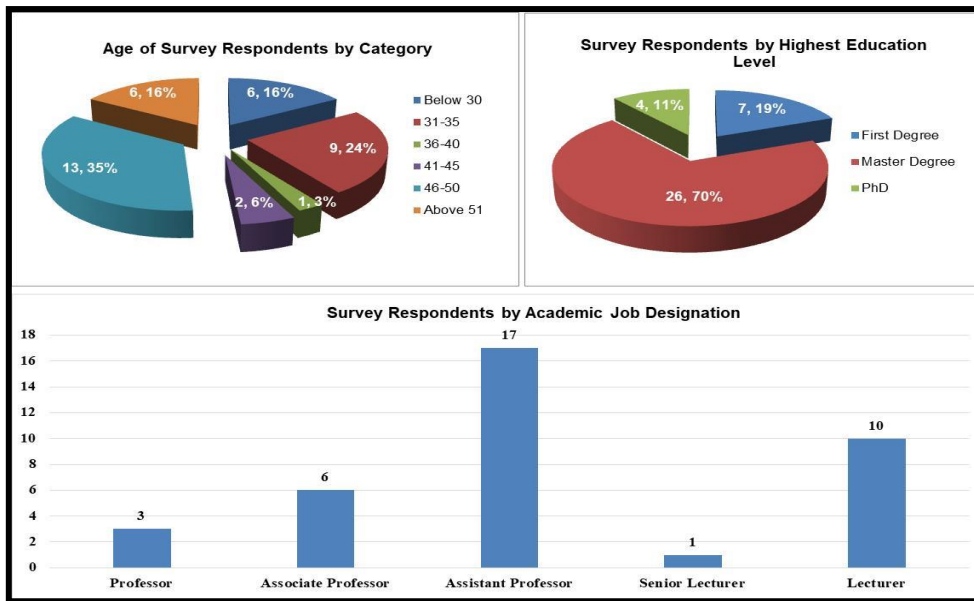


Figure 1: The Demographic Profiles the Respondents – Age, Education Level and Designation

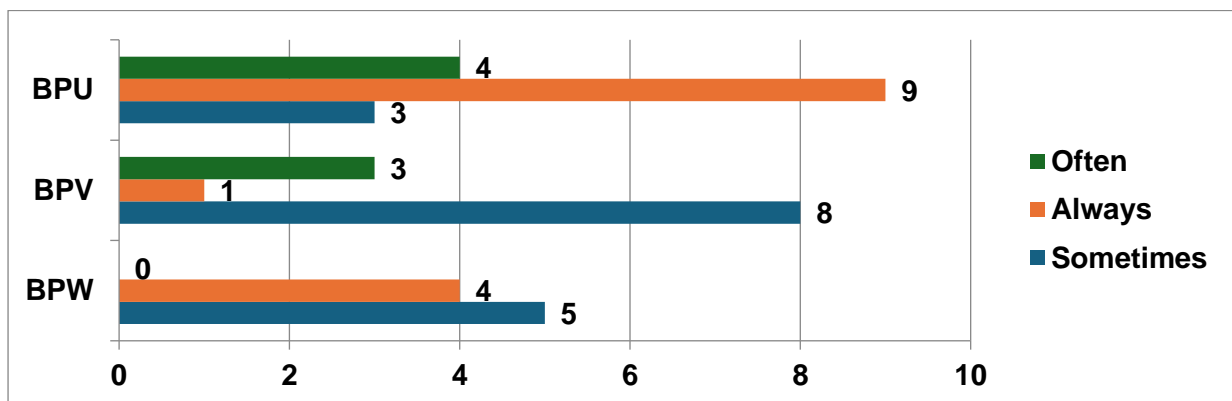


Figure 2: Survey Findings - Perceived Frequency of Electronic Monitoring at Workplace

When queried about the motivations behind implementing electronic monitoring systems application in their respective university, five participants either abstained from responding or indicated a need for more knowledge regarding the rationale. The data obtained from 86% of the participants was subjected to further analysis and categorized based on the commonalities in the meaning of their responses. These categories include Compliance, Performance, Safety and Security, Visibility, and Trend. For example, Respondent#24 from BPU stated the following about the use of a biometric attendance system to track staff working hours: *"I honestly feel it is required in the organization; otherwise, it would be difficult to measure the efforts someone puts into completing his tasks and discipline system in the organization. If you want to treat everyone equally, it is a must option."* His response has commonalities relating to compliance and performance. On the other hand, the statement made by Respondent#3, who is associated with BPV, that the use of electronic monitoring is *"for maintaining transparency in the work environment,"* aligns with the concept of visibility. Respondent#8 affiliated with BPW stated, *"common practice to track dishonest practices by students and staff"* and this respond has commonalities with trend as well as safety and security. This is also comparable to what Respondent#27 remarked on the trend: *"I believe that technology plays a crucial role in our society. Since today's*

*technology connects and monitors every part of our lives, our university will not be an exception.*

Further, according to the survey findings, a majority of the respondents (84%) perceived data/information accuracy captured from their university's electronic monitoring systems positively compared to conventional monitoring methods. Most respondents also expressed satisfaction with the level of their immediate supervisor's knowledge and experience in handling electronic monitoring matters concerning them.

When asked about their assessment of their performance and if the utilization of electronic monitoring has an impact on their ability to complete their jobs, around 49% of respondents reported that they regarded the monitoring practice as "Somewhat" affecting them. In comparison, another 43% of respondents perceived the effect as "Not at All". A tiny percentage (8%) reported feeling "Poor". The majority of respondents from the case studies - BPU and BPW - felt that the introduction of electronic monitoring had "somewhat" influenced their performance in performing work tasks. Upon comparing their responses to open-ended questions, most remarks were concerned the automation possibilities of technological applications.

Additionally, according to the open-ended comments, most participants also conveyed skepticism regarding the possible effectiveness of these systems in improving motivation and truly aiding the efficient completion of job duties. However, a considerable portion of individuals maintained the viewpoint that electronic surveillance is necessary to meet the university's requirements regarding campus security and safety and to enhance the dedication of academic staff to their presence in both the classroom and office.

Also, several participants from BPU expressed apprehensions regarding the limitations inherent in using electronic monitoring to monitor their work performance. For example, Respondent No. 26 – BPU expressed the need for "a specific guideline" before the existing system can be fully trusted and capable of evaluating staff work performance. This is also aligned with the comment from Respondent No. 31- BPU, as follows: "Our university keeps electronic monitoring to a bare minimum... Our performance evaluation is not entirely based on information obtained through electronic surveillance." Respondent No. 25 – BPU highlighted the necessity for a new design strategy for a biometric attendance system to track academic staff members' actual working hours and utilize the data to evaluate work performance.

*"As a faculty member, putting less effort in class or my academic work will not be detected by electronic measures. For academics, if they are promoted and demoted solely based on their presence in universities according to an office time, it will demotivate them from other scholarly works, and they will simply focus on punching in and out."*

Regarding BPW, in line with the interview data, most respondents associated using electronic monitoring to emphasize performance. Respondent No. 11– BPU associated with the deployment of electronic monitoring to "ensure that all departments and faculties are treated equally." Regarding how she felt about her work performance being monitored constantly at the university, she commented: "Employee evaluation is an essential component of every type of organization. So, I believe our authority is simply attempting to do the same to achieve the best result for us."

**Final Stage of Data Collection and Thematic Analysis Findings**

The criteria for selecting case studies were established after successfully completing the first stage of data collection and drawing preliminary conclusions from the survey results. Five criteria were employed to refine the selection of Bangladesh's registered private universities deemed appropriate for the research's case studies. The criteria include being a private institution, having been established for over 15 years, being listed in Bangladesh's private university ranking, having an active student enrolment of over 2500, and implementing some forms of electronic monitoring and surveillance applications. The three private universities that took part in the first stage of data collection are deemed eligible based on these criteria.

However, approval to use their university as a case study was granted only by the management of two universities, BPW and BPU. After obtaining official approval, a qualitative research methodology was developed to collect further data for the study, utilizing case study and interview methods at these two universities. Due to the COVID-19 pandemic, data collection methods were limited to virtual interview sessions and the utilization of secondary data sources. The secondary data were gathered from journals, newspapers, publications, and case study websites about the teaching, research, administrative practices, rankings, organizational structure, management policies, and the overall situation of specific case studies. The researcher encountered challenges in contacting prospective research participants from these universities because of the multiple lockdown periods in Bangladesh. Many potential participants could not participate in the study due to either inadequate Internet connectivity or personal difficulties in managing the hurdles posed by the COVID-19 pandemic.

Selected findings related to BPU were presented and discussed in Mannan and Rohaya (2023). Six academics associated with BPW were interviewed using online meeting platforms from March to April 2021. Consent was obtained from each participant to record the interviews in audio format, and subsequently, all the interviews were transcribed. Every participant is allocated a distinct identifier to preserve confidentiality and anonymity. Table 3 presents pertinent background information regarding the research participants.

Table 3

**Brief Profiles about the Research Participants from BPW**

<b>Gender</b>	<b>Designations and Roles</b>	<b>Identifier</b>
3 males 3 females	5 academicians; 1 academician representing management (Director of ICT Centre)	R#1-BPW; R#2-BPW; R#3-BPW; R#4-BPW; R#5- BPW; R#6- BPW

Thematic Analysis (TA) is a commonly employed technique for analyzing qualitative data. This technique identifies, analyzes, and interprets recurring patterns or significant insights derived from qualitative data (Braun & Clarke, 2006). Braun and Clarke (2006) argue that the analysis approach is flexible and effective in dealing with the complexities and subtleties of qualitative research data. The researchers utilized Braun and Clarke's (2006) six phases of theme analysis to do data analysis and interpretation for this study. The procedures are as follows: Phase 1 consists of familiarizing oneself with the data; Phase 2 involves creating initial codes; Phase 3 entails searching for themes; Phase 4 focuses on reviewing these themes; Phase 5 involves defining and labelling the themes; and finally, Phase 6 is dedicated to producing the report (Braun & Clarke, 2006: p. 87). The study engaged the panopticon

model for the sense making and interpretation of data in the data analysis. Using TA, four major themes were discovered namely: Technology, Employee, Management, and Organizational Practices and Norms. The survey findings were also used to cross-validate the qualitative research findings obtained using the case study method.

### **Case Study Findings and Discussion**

#### ***The Case Study Profile***

BPW was established through a non-profit organization in 1995. This charity organization was established in the late 1950s by a very influential educationist before the independent state of Bangladesh existed. BPW's vision is to pursue excellence in science, engineering, technology, and business through knowledge creation and transfer to improve the quality of life locally and beyond Bangladesh. Hence, the university's mission is to equip students with adequate and relevant knowledge and skills and produce quality graduates who can contribute meaningfully to the betterment of society and the nation. BPW is classified within the pioneer group of private universities established between 1990 and 2000.

As of 2019, BPW employed close to 400 full-time faculty members and admitted more than 7,000 students (UGC, 2020). The university offers both undergraduate and postgraduate academic programs. During the COVID-19 pandemic, BPW extensively leveraged technology-enabled learning, particularly blended learning. The university aims to expand its gigabit fibre-optic backbone to provide broader coverage and reliable Internet connectivity for teaching and learning purposes. In pursuing the university's vision and mission, BPW has strengthened its position among the private universities of Bangladesh. The university is recognized in the local private university ranking as among the top best universities in the country.

#### ***Technology Panopticon Potentials for Performance Monitoring***

This study discovered the implementation of a range of electronic monitoring systems at BPU, including a biometric attendance system, CCTV surveillance system, IUMS integrated with a performance evaluation module and Moodle LMS, website monitoring, and email monitoring reported by the participants.

Table 4

*Electronic Monitoring Applications at BPW*

<b>Technology / Impacts</b>	<b>Biometric Attendance System</b>	<b>CCTV Surveillance System</b>	<b>Integrated Management System</b>	<b>University System</b>
<b>Panopticon Potentials of the technology</b>	<i>Attendance accuracy; physical detection; location-based tracking, fingerprint; enhance security</i>	<i>Real-time surveillance; face recognition; motion detection; continuous observation; also, being used to monitor web browsing activities in the computer laboratory</i>	<i>Integrated Moodle LMS in IUMS platforms has enabled some T&amp;L-related tasks to be visible to stakeholders; embedded feedback mechanism; automate many T&amp;L activities; e-mail monitoring; integrated with a performance system module</i>	
<b>Staff Awareness</b>	Yes	Yes	Yes	
<b>Preference against the conventional method</b>	Yes	Yes	Yes	

The Director of the ICT Centre who is also a professor explained the following

*"...We started utilizing electronic surveillance tools, such as CCTV, biometric attendance systems, and large servers that track all online activity. I may list a few monitoring devices that are used in our university. CCTV is installed in every hallway and detects the presence and availability of every employee. Students assess faculty members as well. Our Vice-Chancellor approved a series of questionnaires for this purpose, allowing students to provide input on faculty members and identify any shortcomings or strong points of a particular teacher..."*  
(R#6-PUB)

R#5-BPW, who has more than ten years of experience in the higher education sector, conveyed the following:

*"...At Bangladesh's private universities, the biometric attendance method is widely used. This enables the university to ensure the compliance of 35 to 40 hours per week for each staff member. Some universities, with their servers, can monitor email correspondence. Large universities also have installed extensive CCTV cameras and can use these tools to monitor teacher movement and other illegal and unethical activities..."*

R#1-BPW commented that a biometric attendance system is essential for the university *"...to keep an eye on the punctual and regular attendance of faculty members at the university... attendance tracking was used for accountability ... CCTV cameras for security."* Reflecting on her experience, she said: *"...When I compare my experiences working with this university and the previous one that*

*used the manual system ... I can say that the manual monitoring system is easier to manipulate, whereas the electronic monitoring system has a systematic recording data."*

All participants demonstrated knowledge and awareness regarding electronic monitoring implementations. Additionally, they were well-informed about the frequency with which these digital platforms were utilized within their respective work contexts. R#5-PUB, for instance, conveyed the following: *"...Basically, CCTV cameras are used by my university for security purposes and surveillance, and not for the monitoring practices involving faculties and performance related. Other monitoring forms, such as the attendance system ... the system is flexible for teachers, with a 35-hour window for in and exit times dependent upon the faculty approval. I am fully aware of the monitoring practices at my university..."*

R#3-BPW and R#4-BPW viewed monitoring practices at their university as *"a regular process"*. R#4-BPW further commented that in the case of using CCTV surveillance system: *"...they {security personnel} took the record so that, if they need any information for evaluation, they can analyze this data. If there is nothing serious incidents happened, I do not think they will analyze it..."*. R#5-BPW, who has strong technical expertise, conveyed his opinion regarding the CCTV monitoring systems as follows: *"...When it comes to CCTV systems, poor quality cameras make image extraction difficult. As for accuracy, well, that depends. In Bangladesh, most organizations, particularly those in the education sector, do not upload images to the image servers or use good platforms to analyze employee performance...So, maybe between 50 and 60 percent accuracy..."* He stated that the management consistently communicates with the staff regarding gathering and monitoring data on specific platforms, such as IUMS. Additionally, they and other academic staff are cognizant that part of this information is utilized for performance assessment purposes.

The utilization of IUMS, apart from integrating LMS features, has been extended to include submission of student grading sheets. R#6-BPW remarked the following: *"...We have a system called IUMS, where at the end of the semester, a teacher needs to submit their grade sheet, which is also a monitoring part for checking whether the faculty member evaluates the answer script timely or not..."*

R#2-BPW expressed a strong opinion regarding the suitability of IUMS to evaluate the quality of teaching and learning processes. She commented the following: *"...a biometric attendance system is accurate. However, for the student's evaluation process, sometimes this feature can be manipulated ... as the evaluation is coming from the students, the process is ambiguous... So it is not 100 % accurate ..."*

This study found that the extensive installation of CCTV surveillance cameras around campus buildings at BPW has not generated much concern among the participants. R#3-BPW commented on the following: *"A CCTV surveillance system is required for security reasons. I also understand university administrators' point of view. They must deploy this monitoring system to keep track of some slackers and irresponsible employees."*

During the interview, a discussion was initiated addressing the perceived need to install CCTV surveillance cameras in classrooms. It was observed that all participants expressed unfavorable opinions on this matter. There is a contention among the participants that



teaching is a more creative profession than other administrative jobs. Hence, such monitoring practice is not appropriate.

*"They need to focus more on the classroom teaching quality rather than monitoring the teacher's presence during classroom teaching, such as when he or she is entering and leaving the class or office. How much time I give ... effect to my organization is more important than how many hours I stay in my office" (R#1-BPW)*

*"Mostly, senior faculty members think it is a kind of insult for them as a system monitors their work or office presence. They believe the education sector is not like garments or any other industry that justifies the need for the employee to be monitored, especially the academic staff." (R#6-BPW)*

Most participants were not too concerned about how the information collected from the monitored activities was being used, except concerning personal performance. Most also stated they believed in the management group's technical competence and the Information and Communication Technology (ICT) Centre team to oversee and handle the monitoring efforts.

### **Impacts of Electronic Monitoring and Management Practices**

The Director of the ICT Centre, R#6-BPW, reported the gradual adoption of electronic monitoring platforms at PUB.

*"We have not yet completed all of our plans. We are gradually improving quality and implementing the system in several departments. The senior faculty first rejects this approach, but they may see the benefits with time. Our examination system is entirely electronic. Before the exam, students receive a 3D visual representation of their seating arrangement on their mobile phones. We use the automation approach for everything: grading, seating arrangements, admission cards, and invigilator rosters. As a result, the teacher and students benefit from implementing these monitoring platforms."*

In general, based on the findings, the use of electronic monitoring at the university to monitor work performance was well received by the academic staff members. They conveyed their contentment with the utilization of technology for monitoring purposes, noting that the level of monitoring is comparatively less stringent. Most respondents were very performance-focused and evaluated the usage of technology to improve their work performance. R#4-BPW recalled his experience and remarked, *"At the beginning of my career, I used to get bothered by the feeling that someone always monitored me. However, that has since passed, and it no longer bothers me."* R#2-PUB perceived positively regarding the management's practice of deploying technologies to monitor staff performance electronically. He commented that: *"...because I always strive to do my job responsibly, it is good there are records ... authority can see what I have done. For me, it is advantageous. I do not find it intrusive."*

Based on feedback from the majority of participants, it appears that more informal approaches are being used in terms of grievances and monitoring procedures, where concerns or complaints related to monitoring and surveillance practices can be directed to the head of the department or simply by sending an email to the respected management or authorities. R#4-BPW described the informal process: *"In our cases, just go to your department head and talk to him. If it is not working, go to the dean or registrar, or you can even talk to the VC [vice chancellor] directly concerning any problem with the electronic monitoring."* The Director of the ICT Centre, R#6-BPW, conveyed the practice as follows:

*"There exists a certain process. Our institution's hierarchical structure is upheld, wherein faculty members encountering any issues or grievances about the electronic monitoring procedure are advised to seek guidance from their senior colleagues as a primary step, followed by consultation with the departmental head."*

In addition to teaching and learning activities, a number of the participants raised the necessity for the system's design and setup to be rigorous and appropriate given the nature of their time spent, including research. Additionally, a high degree of trust was indicated by most participants in the management competencies, the ICT personnel, and the team. More significantly, the academics believed that using electronic monitoring assisted them in continuously reflecting on their overall individual performance. Additionally, they expressed anticipation for integrating enhanced intelligent functionalities inside the monitoring platforms. For example, R#2-BPW and R#5-BPW described the benefits of the electronic monitoring system being equipped with an alert performance tool as follows:

*"When an organization discovers that it is not meeting its objectives, it uses this smart system to notify staff members and faculty informally or formally that surveillance tools are watching them and should take extra care in their work." (R#5-BPW)*

*"If an organization has this kind of monitoring system in place, then any employee who tries to avoid their responsibilities or be slack at work will be unable to do so." (R#2-BPW)*

As a member of the academic faculty, R#6-BPW, who is also taking care of the ICT Centre, acknowledged some anxiety felt by his peers regarding the constant monitoring of work performance at their university. Hence, he explained the management's tactful strategy by emphasizing their flexibility and less stringent monitoring practices at the university.

### **Work Performance Monitoring in An Electronic Panopticon Environment**

Within an electronic panopticon setting, the employees' awareness of being monitored is of utmost importance in influencing the power dynamics between employees and supervisors within an organizational framework and the interactions among all components - employees, management, technology, and organizational norms and standards. Even without surveillance or monitoring technology, the panopticon effect can still exist if an individual perceives being monitored (Botan & Vorvoreanu, 2005). Employees' impression of vulnerability motivates them to modify their behavior by engaging in specific acts or abstaining from them due to their awareness of being monitored or observed. When management and authorities actively participate as social actors within the organization's social and work context, including the execution of surveillance and monitoring policies and protocols, it significantly impacts employees' beliefs about their social and work environments, as well as their perceptions of threats and risks to their freedom and autonomy.

All the research participants in this study, including those who responded through the survey method, acknowledged the substantial connection between their job conduct, organizational productivity, and overall success. In essence, for T&L, when the performance of the academic staff is insufficient, they cannot provide students with high-quality knowledge and skills. The inadequate performance exhibited by many teaching staff members is likely to significantly influence the overall performance of the university as an educational institution. In the absence of adequate monitoring measures, the long-term consequences for the university's academic standing will be detrimental. The university may be exposed to reputational risks in this regard. Given this reasoning, adopting electronic surveillance as a panopticon emerges as an unavoidable trajectory for the university.

The implementation of electronic monitoring as a panopticon at BPW, to monitor work performance, was met with limited resistance from the university staff. The findings reveal a notable absence of conflict. The study findings indicate that a majority of participants recognized the effectiveness of electronic monitoring in promoting self-discipline behaviour among university staff. In the context of using a biometric attendance system, the academic staff involved in the research observed the implementation of this form of monitoring as more reliable and superior compared to the previous method. Furthermore, this system has proven to be advantageous for their university by promoting discipline, improving attendance, and ensuring compliance with university regulations at workplace. Most of them, however, expressed discontent with the university's attendance requirement and the system's strict monitoring of their work hours, which failed to account for remote job-related duties. Some academic staff advocated for the university administration to reconsider the attendance policy, alleging that it hampered productivity and performance. Their responses in this situation are evident as a sense of unfairness arising from the limitation placed on their ability to manage their work schedule autonomously. Similarly, all participants had a strong negative response when the idea of installing CCTV cameras in classrooms to monitor the effectiveness of teaching pedagogy was brought up. The findings clearly show that most participants disapproved of the monitoring practice due to its perceived incompatibility with the nature of the teaching profession, emphasizing the importance of allowing teachers to be creative in their pedagogical methods when teaching students.

The study conducted by Hossain (2016) included the participation of 250 university academics from fifteen private universities in Bangladesh. The survey found that academics voiced dissatisfaction with a heavy administrative workload that required appropriate compensation in addition to their teaching duties. Their lack of satisfaction notably impacted their drive to progress in their careers, particularly in enhancing their professional skills through research and training. Also, the extensive surveillance practices using CCTV cameras, which included monitoring teachers' attendance, evaluating their teaching and disciplinary actions towards students, overseeing their management of non-classroom time, and observing their conduct during school recess, were found to have a significant influence on teachers' behavior in schools in Israel (Perry-Hazan & Birnhack, 2019). The study conducted by Perry-Hazan and Birnhack (2019) using an interview method involving fifty-five (55) teachers reported adverse effects such as demoralized teachers, induced resistance, and social categorizations that reinforce teachers' low social standing. The study also reported on the consequences of the issue of trust between teachers and their colleagues as well as the school's principal. The findings support Backhaus's (2019) claims, reflecting on the impact of social relationships in the workplace, that using electronic monitoring to assess staff and their work can have a significant effect on organizational trust and perceived control inside the workplace, as well as stress levels, motivation, and job satisfaction.

Overall, the participant feedback indicates that the reconfigurable ICTs for electronic monitoring can potentially create an electronic panopticon environment, which could be widely accepted. However, this acceptance depends on university management modifying their monitoring practices. The research findings suggest that the planned adjustments comprise a request to reconsider the attendance regulations for academic staff. Additionally, it is essential to allocate additional resources towards training initiatives, not just for individuals with expertise in ICT and security but also for other employees within the university administration and workforce. This training should prioritize improving their

understanding and skills related to utilizing electronic monitoring systems that are being established based on their specific professional portfolios.

Furthermore, research also underscores the significance of management and their supervisory function as dynamic social actors in relation to these impacts. Alder (1998) contended that individuals in positions of power within organizations can effectively address ethical dilemmas related to electronic monitoring by employing a communicative-ethical approach in the communication aspects of designing and implementing technologies and related policies and procedures for monitoring and surveillance purposes. According to Alder (1998), there are four processes that might have a significant impact when carried out by the management and authorities responsible in the decisions to employ electronic monitoring applications. During the design process, it is critical to give monitored employees the opportunity of expressing their ideas and provide feedback on the system's design. Additionally, the management also should thoroughly discuss their monitoring protocols and provide employees with information regarding the occurrence of monitoring. Also, it is important for the management to integrate electronic feedback with face-to-face human feedback and put measures to ensure such feedback is constructive and non-punitive.

### **Conclusion**

The research findings indicate that successfully implementing a panopticon, such as electronic monitoring, can result in positive outcomes. Nevertheless, the impact of these panopticon effects relies on a fundamental basis of trust among employees over implementing this monitoring approach, intending to benefit both the employees and the management. The study also found that the technological features of electronic monitoring applications, which enable the gathering and dissemination of performance-related data and information to employees to enhance transparency, have a substantial effect on building trust and empowering the workforce. However, without a clearly defined policy on the purposes and goals of electronic monitoring, as well as a clear explanation of how the data and information acquired will be used, sustainability issues and discrepancies are possible. These shortcomings will also make these institutions susceptible to potential risks. Hence, in addition to contribute theoretically to strengthen the panopticon model, the research also offers some essential managerial and policy implications that can facilitate developing a functioning governance model for managing electronic monitoring applications and their impacts in an organizational context.

### **Theoretical Contributions**

By addressing the panopticon model's theoretical shortcomings and expanding on the principles put forth by Botan and McCreadie (1990); Botan (1996); Botan and Vorvoreanu (2005), this study adds to the body of theoretical knowledge. This study presents a more detailed analysis of the conceptualizations around the panopticon effects that occur at the individual level. This approach specifically highlights the active roles of social actors—employees and management—in the social and work context that further shape the organizational norms and practices surrounding the implementation of electronic monitoring and related governance frameworks and management practices. The revised framework provides detailed theoretical assumptions that are deemed important to properly analyze and explain the complex dynamics of social behavior that might lead to the panopticon effects, which are probable outcomes of the built panopticon. This contributes to enhance understanding of the activation of panopticons at the employee level and the effectiveness

of the management's implementation approaches and strategies in establishing an electronic panopticon environment at the workplace.

The revised panopticon model incorporating D'Urso's (2006) recommendations has been valuable in offering insights into the practical implementation of a governance model in countries such as Bangladesh, known for its extensive monitoring and surveillance activities.

### **Managerial and Policy Implications**

In line with the Digital Bangladesh vision, the government has rolled out initiatives to transform the country's higher education sector through the Ministry of Education and the University Grants Commission (UGC). An example of such initiatives is improving the digital infrastructure and facilities of certain higher education institutions in Bangladesh, including the rollout of the implementation of IUMS (UGC, 2020). BPW is among the universities chosen to implement IUMS. The outcomes from this research have shown that all academic staff at BPW perceived IUMS with LMS features that supporting teaching and learning activities positively due to the capabilities that can increase their visibility, especially in COVID-19 pandemic circumstances and afford a certain degree of empowerment in their professional capacities. One crucial implication derived from the research is that academic staff will favor using electronic monitoring if the technology features are designed to provide them with more control. Due to their increased visibility within the organization, employees can exercise improved control over processes and outcomes (Elmes et al., 2005).

Given the swift progress of AI being incorporated into LMS in the education industry, academic staff, university administrators, educational authorities, and policymakers must be cautious about the potential adverse effects of this technology on the productivity and well-being of students and academic staff. A study conducted by Kitto (2003) has extensively explored the concept of online learning as a design resembling a panopticon. Kitto (2003) suggests that certain features, such as 'Online Examinations' and 'Manage Students' functions, can enforce disciplinary power, aligning with the ideas of Foucault (1977). The lecturer has considerable authority in overseeing and regulating a student's course access, participation activities, and the parameters governing time and available functions. The software program can function as a potent panopticon mechanism, facilitating individuals' and collectives' observation, categorization, and standardization (Kitto, 2003).

This study found that BPW, similar to the other two universities, still needs to develop dedicated policies and governance frameworks tailored to using electronic monitoring platforms to monitor staff. These policies and governance frameworks are critical for clarifying the legitimacy and enforceability of regulations and addressing ethical concerns. In the absence of standards and governance frameworks, the consequences of unforeseen occurrences related to electronic monitoring would elicit a reactive rather than proactive response, which is not conducive to effective managerial decision-making.

This study proposes two recommendations to rectify these managerial shortcomings: risk management practices and policies and guidelines for electronic monitoring. Risk can be defined as the overall adverse consequences resulting from exploiting a vulnerability, considering the likelihood and severity of its occurrence (Joint Task Force Transformation Initiative, 2012). From an information technology and systems perspective, risk management pertains to identifying, assessing, and mitigating risks to maintain an acceptable level of risk and achieve organizational objectives (Joint Task Force Transformation Initiative, 2012). This involves enhancing the security of IT systems that handle organizational information, enabling informed decision-making by management regarding risk management expenditures within

the IT budget, and supporting the authorization or accreditation of IT systems through the documentation generated from risk management activities (Joint Task Force Transformation Initiative, 2012). In the context of risks associated with electronic monitoring applications, few significant risks to be acknowledged that can occur as follows, based on comprehensive research conducted by Eurofound (2021) concerning electronic surveillance and monitoring practices at the workplace

- The utilization of digital technologies poses potential hazards in infringing employees' rights to privacy and data protection, particularly in remote work.
- There is a possibility that employers may employ monitoring and surveillance technologies for unintended or unauthorized purposes.
- Digital technologies can render monitoring and supervision processes less tangible and observable, expanding the limits of acceptable and legitimate monitoring practices.
- The intensification of power asymmetries within organizations may occur.

Implementing invasive surveillance practices has been observed to harm work autonomy and trust, resulting in a decline in staff motivation and employment relations. It is imperative for BPW and all higher institutions in Bangladesh to consider the incorporation of systematic processes for risk management to enhance the internal and external governance mechanisms inside the university structure. This can be achieved by implementing established practices and procedures for the practice of risk management, which include the following steps: (1) formulation of a risk management plan; (2) identification of potential risks; (3) assessment of the identified risks; (4) development of strategies to respond to the identified risks; (5) determination of the level of risk; and (6) ongoing monitoring of the identified risks (Syreyshchikova et al., 2020).

In the BPW context, establishing policies and guidelines to be integrated within the governance framework plays a crucial role in clarifying the legitimacy and enforceability of regulations and procedures while addressing ethical considerations related to monitoring practices and electronic monitoring. This can be achieved by formulating comprehensive written policies and guidelines to govern the utilization of electronic monitoring. Despite the existing weaknesses in the legal and regulatory frameworks regarding safeguarding individual privacy and data protection in Bangladesh (Dhali et al., 2020; Islam, 2022), all universities must take proactive measures to enhance their organizational monitoring practices to support the Digital Bangladesh vision effectively.

### **Research Limitations and Recommendations for Future Study**

The present study is subject to a few limitations. The implementation of lockdown measures in Bangladesh from 2020 to 2021 because of the COVID-19 pandemic hindered the execution of other approaches to gather qualitative data, including fieldwork and on-site observations. As a result, the study solely utilized data from the in-depth interviews and secondary data obtained from the case studies. The use of survey results was restricted, primarily functioning to assess possible case studies and validate the findings gained from the literature to continue pursuing the research investigation utilizing the case study method. The COVID-19 pandemic has made it challenging to collect rich qualitative data from diverse social actors in the workplace, limiting the ability to validate qualitative research findings through triangulation.

Future studies that replicate this research using a qualitative methodology should consider, among other methods, conducting observations in a natural fieldwork setting to investigate workplace interactions in the presence of the electronic panopticon. Future

research also should expand the scope of the study by incorporating multiple case studies from comparable business sectors, such as public universities and universities located in various nations. This approach can provide a comprehensive comparative analysis that might benefit educational authorities and policymakers regarding electronic monitoring applications and practical governing frameworks. Also, the research framework developed in this study is usable and can be applied to analyze and interpret cross-cultural workplace behavior, with the panopticon principles and assumptions providing theoretical support. This effort can address the overwhelming dominance of findings from the Western employment setting in the current literature and mitigate bias. Future research can use the framework to analyze work situations that utilize less advanced technology inside an electronic panopticon system, which is prevalent in many developing and underprivileged countries.

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