

A Case Study of Private University in Bangladesh Using Electronic Monitoring: Some Practical Implications

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Abstract

This study explored how a Bangladeshi private university monitors staff performance through electronic monitoring. It further investigated the perceptions of academics on how electronic monitoring affected them. Guided under the panopticon model, a qualitative study was designed and data were obtained using the case study method and others, including a series of in-depth interviews with the academics. The research outcomes revealed that electronic monitoring was perceived as a viable substitute for conventional surveillance methods. Some noteworthy perceived benefits of electronic monitoring include heightened safety measures and the ability to effectively monitor and deter illegal or unethical activities, enhance staff productivity, promote cost-effectiveness, foster a sense of self-discipline, accountability, and responsibility among staff. Nevertheless, the academic staff exhibited reluctance towards the implementation of closed-circuit television (CCTV) cameras within classroom settings to monitor their pedagogical effectiveness. Regarding performance evaluation, most participants underlined the need to use various data sources for the review process. The research has offered significant insights to university administrators, education authorities and policymakers in understanding how to effectively manage electronic monitoring in light of the increasing integration of artificial intelligence tools.

Keywords: Electronic Monitoring, Private University, Bangladesh, Panopticon, Academics

Introduction

Concerns about the proliferation of technological tools and systems used to monitor employees have increased. Artificial Intelligence (AI) and its subfields have facilitated the automation of workforce surveillance and monitoring, as reported by Burnett and Lisk (2019). They regarded electronic surveillance as the monitoring and collecting people's digital footprints, which can be accomplished by checking someone on CCTV, reading text messages or internet browsing history, or even secretly or openly activating webcams or microphones to observe individuals. By leveraging new technological tools that monitor workplace interactions in real-time with an increase in machine learning and artificial intelligence

applications, electronic surveillance enables organizations to measure and evaluate the productivity of their workforce effectively.

Electronic monitoring is defined in this study as using electronic devices, systems, and technologies to collect, store, analyze, and share data and information on employees and their activities, allowing an employer or authority to monitor and make decisions about employee work performance. In the context of higher education, there is an emerging trend in the utilization of electronic monitoring platforms to oversee many facets of academic processes and activities. Currently, many higher education institutions globally are implementing data infrastructures to strategically gather and analyze various dimensions of students' lives and academic achievements to utilize big data applications and learning analytics (Jones et al., 2020). These infrastructures are also employed to monitor the academic work activities of employees, particularly academics (Gourlay, 2022).

Despite a substantial body of research documenting extensive implementations of electronic monitoring and its effects in the workplace, very few studies investigated the context of its application in higher education in a developing country context such as Bangladesh. This study responds to this gap. It explored how a Bangladeshi private university monitors staff performance through electronic monitoring. It further investigated the perceptions of academics on how electronic monitoring affected them. Two research questions were formulated for the research, as follows: (1) how electronic monitoring is being used in a private university in Bangladesh, and (2) what are the perceptions of academics on how electronic monitoring affects their work performance? The panopticon model served as the theoretical underpinning for the research inquiry. The panopticon concept, initially introduced by Jeremy Bentham in his architectural blueprint for a prison system, has exerted significant influence in surveillance studies.

Our research findings provide useful insights into the implications of electronic surveillance in the setting of private universities in Bangladesh. These findings have major practical consequences for educational authorities, university administrators, policymakers, and other higher education professionals. They shed light on effective management approaches for electronic monitoring in the context of increasing integration of Artificial Intelligence (AI) tools. The results of this study indicate a pressing necessity to enhance knowledge and skills regarding electronic surveillance and monitoring practices. Additionally, it is crucial for university administrators to adequately prepare their ICT team and security personnel to handle the technological capabilities effectively. While electronic monitoring platforms serve the university's interests, the university management authority must also ensure that those being monitored - academic and non-academic employees - have some control over the relevant processes, allowing them to be more efficient at work.

This paper is organized as follows. The next section gives a summary of the selected literature. A description of how panopticon-guided qualitative research was designed and carried out to collect data is given. In addition, the data collection using mainly the case study method and interviews are described. The Thematic Analysis (TA) technique used to undertake data analysis for the case study is further elaborated. The findings of the research are then described and discussed further. This paper concludes by emphasizing the research's practical relevance.

Literature Review

Bangladesh Higher Education Sector

As of July 2023, Bangladesh has approximately 170 million people (Worldometer, n.d.). The country is on pace to leave the UN's list of Least Developed Countries (LDC) by 2026 (The World Bank, n.d.). The Bangladesh government launched the Digital Bangladesh 2021 Vision, which outlines some of the long-term goals for the country and various sectors - government, business, academia, IT specialists, media, and civil society - to transform the country and various sectors through advanced ICT applications as enablers to create the Bangladesh of 2041 (Mazumdar and Alharahsheh, 2020; Chowdhury, 2021).

In the context of the higher education sector in Bangladesh, many have argued that the substantial growth of private universities since the 1990s can be ascribed to notable shifts in neoliberal policies and legislative reforms within the higher education system (Kabir, 2013). The Private University Act of 1992 allows for the establishment private universities in Bangladesh, with authorization from the government, by individuals, associations, charitable funds, or institutions (Kabir, 2013). The government implemented revisions to the Act in April 1998; the Private University Act of 2010 was enacted to replace the previous act (Kabir, 2013). The government, through its agency - the University Grants Commission (UGC) - implemented a 20-year Strategic Plan for Higher Education 2006-2026 (SPHE) and, with the assistance of the World Bank, also executed a 5-year Higher Education Quality Enhancement Project (HEQEP) in 2009 to further strengthen the higher education institutions and make them more competitive (Kabir, 2013). Parvin (2018) conducted a critical analysis to explore the obstacles faced by public universities in ensuring quality education. She asserted that until the implementation of a nationwide quality assurance program by the government in 2015, public universities in Bangladesh had not undergone any internal or external evaluation or accreditation processes. A previous study claimed that private higher learning institutions in Bangladesh prioritize profit-driven objectives, resulting in a lack of emphasis on workplace conditions, amenities, academic staff remuneration packages, and opportunities for career advancement (Masum et al., 2015).

As of July 2023, UGC-approved private universities, as listed on its website (<http://www.ugc-universities.gov.bd/private-universities>), are 112 universities. Private universities in the nation are increasing in popularity and are more market-driven, leading to greater deployment of good information and communication technology (ICT) infrastructures to keep up with the expanding number of students enrolled at each institution (Mia et al., 2019).

The COVID-19 pandemic profoundly impacted private universities in Bangladesh, resulting in financial hardships and economic obstacles due to a decline in student enrollment and an increase in dropout rates. The University Grants Commission of Bangladesh documented 328,689 students registered in 107 private institutions and 4,362,187 students enrolled in 46 public universities in 2020 (Akhter, 2023). The year 2021 witnessed a decline in the enrollment of university students, with around 5.3% of the total student population discontinuing their studies (Akhter, 2023). The decline in student enrollment in Bangladeshi universities since 2021 was attributed to the pandemic and economic challenges (Akhter, 2023). It was also mentioned that private universities reported financial difficulties during the pandemic, with more than 20% of their students discontinuing their studies (Genilo, 2022). Many students who continued their education could not pay, and new students could not be admitted due to the cancellation of government secondary school exams (Genilo, 2022). Some of these universities also lowered salaries for university teachers, which prompted

complaints from affected employees (Genilo, 2022). According to Trading Economics (n.d.), Bangladesh's unemployment rate rose from 4.4% in 2019 to 5.2% in 2020, followed by a marginal decline to 5.1% in 2021. The nation's unemployment rate stood at 4.7% in 2022 (Trading Economics, n.d.).

One notable impact of the pandemic concerning performance monitoring at both institutional and individual professional levels is the increased necessity for higher learning institutions to consider the student educational experience in the context of online learning and traditional face-to-face instruction within physical classrooms. Shohel et al. (2022) identified a notable obstacle faced by Bangladesh universities while attempting to adopt online teaching and learning approaches during the initial stages of the pandemic. Many factors influenced this transition process, including readiness, limited resources, financial means, inadequate digital literacy, internet connectivity, and appropriate physical and virtual infrastructure; these factors affected the students and the university teachers (Shohel et al., 2022). During this transition phase, the majority of university teachers reported relatively poor student participation during the virtual T&L time. The study used an online survey method and received 525 survey responses from university teachers from universities across Bangladesh.

Some Latest Trends in Surveillance and Monitoring Practices

Traditional surveillance technologies, according to Swartz (2021), will be largely supplanted by the widespread use of wearable fitness gadgets, GPS, RFID (Radio Frequency Identification) devices, microchips, or job analytics software. Supercomputers enable organizations to conduct in-depth evaluations of their employees' productivity, health, and job attitudes (Swartz, 2021). Several large corporations even utilize fitness-tracking wearables to keep track of their personnel (Swartz, 2021). It was also stated in the article that companies such as Intel, IBM, Accenture, and Twitter have begun employing sentiment analysis software to track the moods of their staff. The utilization of artificial intelligence (AI) integrated characteristics in sentiment analysis facilitates the identification of emotions conveyed within textual content (Taherdoost and Madanchian, 2023). Business organizations can also utilize it strategically to gather customer feelings, preferences, and beliefs for branding and competitive positioning strategies (Taherdoost and Madanchian, 2023).

The higher education sector has seen an increase in the use of numerous technological innovations, including advanced AI capabilities for surveillance and monitoring. These technologies attempt to improve teaching and learning activities while also streamlining academic operations, administrative responsibilities, and monitoring at universities. Data Analytics, for example, is increasingly used not just for learning and analysing student academic conduct but also for tracking their well-being and mental health. Rezapour and Elmshaeuser (2022) demonstrated the application of several machine learning and statistical models to examine students' self-reporting of their feelings during the COVID-19 pandemic, building on previous research. The variables linked to course structure, teaching mode, and academic accomplishment were discovered to be the most relevant variables contributing to students' frustration. They suggested that universities return to face-to-face T&L activities to reduce academic stress induced by virtual classes.

Biometric applications are another influential monitoring technology being deployed extensively in higher learning institutions. The integration of biometric identification tools, such as fingerprint scans, facial recognition, and other biometric features, into campus security systems and student services has resulted in significant enhancements in access

efficiency and security measures. Bagga et al. (2022) proposed a design for a new biometric-based access control method for video surveillance systems that provides access to real-time video surveillance data from deployed Internet of Things (IoT) smart devices. The process works through a cloud server, where the user and the device mutually authenticate each other and create a session key to access the data safely (Bagga et al., 2022). In modern university settings, biometric applications have become prevalent for monitoring attendance and mitigating the potential for unwanted access to physical and virtual locations. This technology offers a heightened level of security compared to physical tokens, which are susceptible to loss, theft, or unauthorized sharing.

Panopticon Concepts and the Panopticon Effects of the Technology

The panopticon metaphor by Jeremy Bentham is influential as a thinking tool for developing ideas on the influence of electronic surveillance in the workplace. In the late 1700s, Jeremy Bentham developed the panopticon notion from a prison system (Manokha, 2020). His primary design approach is to observe as many prisoners with the fewest number of guards and other security costs as possible (Manokha, 2020). In Jeremy Bentham's panopticon prison design, there are three basic assumptions (Manokha, 2020). The "watcher" is the visibility of surveillance objects, while the "watched" is continuously monitored (Manokha, 2020). The goal of the panopticon of setting a guard tower was to make prisoners believe that they are surveillance constantly, which makes them behave properly and practice self-surveillance (Bain and Taylor 2000). Michel Foucault, a French philosopher, extended and applied the panopticon concept outside of the prison context in 1977. Foucault (1977) asserted the concept of self-surveillance in relation to power, knowledge, and discipline and discussed his ideas of panopticism, in which prisoners begin to regulate their behavior out of fear of being watched, even when they are not actually being watched.

Zuboff (1988) introduced the term "Information Panopticon" to describe how computer technology was used to monitor employee performance and the outcome of their work. She applied the word "Panopticon" due to the similar technique to the prison method. Here, employees could not say when they were monitored because the manager could check them continuously (Zuboff, 1988). In the information panopticon model, an individual can function as both an observer and an observed (Zuboff, 1988). When a middle manager supervises his team, an individual of a higher rank in the same organisation can also be observed (Zuboff, 1988). She also found another critical point in the electronic monitoring system to monitor the people and work processes. It can provide security while identifying the excellent employee and the employee who made a mistake (Zuboff, 1988).

Botan and Vorvoreanu (2005) further expanded the panopticon model to apply in a study to determine the effects of electronic monitoring in an organization context. According to Botan and Vorvoreanu (2005:133), these four elements must exist and interact in the workplace to have noticeable panopticon effects: (1) employee awareness of being watched; (2) surveillance capability of technology; (3) management policy; and (4) maturation. According to Botan and Vorvoreanu (2005), the dynamic interplay between these four elements will have panopticon effects observable in an electronic panopticon context. Their model has been applied in this study to uncover the effects of electronic monitoring in the workplace.

Methodology

Research Framework and Approach

The panopticon model, specifically the model proposed by Botan and Vorvoreanu (2005), was used as a conceptual tool to examine the implications of electronic surveillance in the university setting. Employee awareness of being observed is the first element given by Botan and Vorvoreanu (2005), which they argue must exist to observe panopticon effects. The second element of the model is the panopticon potential of technology, which will be determined by the extent of its technological capabilities in making employees visible, keeping the surveillant authority invisible, generating detailed data and records, and automatically performing detailed analysis. The third element is the management policy, which incorporates surveillance and monitoring technology. The final element, maturity, identifies the point at which workplace surveillance activities and processes relevant to the other aspects have been integrated and implemented with management policy. Only when these four elements exist and interact dynamically in the working setting do the panopticon effects become apparent (Botan and Vorvoreanu, 2005).

This investigation constitutes a component of a broader study, wherein case studies and interviews were utilized as the principal approaches for collecting qualitative data. A case study entails a comprehensive analysis of a singular entity, such as an organization, a collective of individuals, or even a person (Merriam & Tisdell, 2015). The study employed purposive sampling to assess universities that would serve as case studies for the research and to recruit participants for the study. Purposive sampling is a non-probability sampling method that is recommended for effectively selecting research participants who may contribute to the achievement of a particular study's research objectives and inquiries (Showkat & Parveen, 2017). Moreover, as emphasized by Patton and Cochran (2002), purposive sampling is a suitable approach for selecting case studies, as it enables researchers to make use of the most easily accessible resources for qualitative research. This study employed online interviews with research participants who voluntarily consented to participate due to the lockdown imposed during the COVID-19 epidemic. Additionally, the researchers acquired secondary data from publicly accessible sources such as publications, websites, social media platforms, prospectuses, brochures, annual reports, and university newspapers.

Data Collection at BPU and Thematic Analysis Findings

BPU is among the three universities that participated in the overall data collection process for the research. After receiving formal authorization from the university's top management to utilize BPU as a case study, we devised a qualitative research methodology to gather data. Eight (8) comprehensive, semi-structured interviews were carried out from March to April 2021. All the interviews were captured in audio format and transcribed afterward. Every participant involved in the study is assigned a distinct identifier to uphold the principles of confidentiality and anonymity. Table 1 presents pertinent background information about the research participants.

Table 1

Brief Profiles about the Research Participants from BPU

Gender	Designations and Roles	Identifier
5 males 3 females	4 academicians; 2 academicians cum management (Director); 2 non-academicians (Registrar & Head of IT Department)	R1-BPU; R2-BPU; R3-BPU; R4-BPU; R5-BPU; R6-BPU; R7-BPU; R8-BPU

Thematic Analysis (TA) is a widely utilized method for analyzing qualitative data. TA is a methodical approach used to uncover, analyze, and interpret patterns that arise as themes or meaning from qualitative data (Braun & Clarke, 2006). "Thematic analysis can be an essentialist or realist method, which reports experiences, meanings and the reality of participants, or it can be a constructionist method, which examines the ways in which events, realities, meanings, experiences and so on are the effects of a range of discourses operating within society" (Braun & Clarke, 2006: p. 81). According to Braun and Clarke (2006), the analysis approach demonstrates adaptability and use in addressing the intricacies and nuances of qualitative research data. In this study, the six phases of thematic analysis as proposed by Braun and Clarke (2006) were employed to conduct data analysis and interpretation. The six phases are: Phase 1 – Familiarizing yourself with your data; Phase 2 – Generating initial codes; Phase 3 – Searching for themes; Phase 4 – Reviewing themes; Phase 5 – Defining and naming themes; and finally, Phase 6 – Producing the report (Braun & Clarke, 2006: p. 87).

Using TA, four major themes were discovered namely: Technology, Employee, Management, and Organizational Practices and Norms. The panopticon model was employed as theoretical guidance for sense-making and interpretation, allowing for further identification and examination of the panopticon effects linked to the identified themes and sub-themes in the research. The research findings are structured and presented according to the elements of the panopticon model as suggested by Botan and Vorvoreanu (2005), with an emphasis on the use of electronic monitoring for productivity and performance monitoring.

The Use Of Electronic Monitoring At Bpu

BPU – Bangladesh Private University

BPU, an acronym for the case study, is a privately owned university that belongs to the developing university group. Established in 2003, BPU was created in accordance with the regulations outlined in the Private University Act of 1992, and it currently operates under the governance of the Private University Act of 2010. The establishment of the university was initiated by a collective effort of a diverse group of philanthropists and professionals collaborating under a nonprofit institution. The university seeks to establish worldwide recognition and position itself as a distinguished institution for both teaching and research. The university aims to provide students with the knowledge and skills necessary to become future business leaders. The university employed over 160 full-time academic personnel and welcomed over 3200 students in 2020. The university has graduated over 9000 students since 2019.

Electronic Monitoring Implementation at BPU

This study discovered the implementation of a range of electronic monitoring systems at BPU, including a biometric attendance system, closed-circuit television (CCTV) security cameras, a

Performance Evaluation System, website monitoring, and email monitoring. Some perceived benefits of electronic monitoring discovered in the research include heightened safety measures and the ability to effectively monitor and deter illegal or unethical activities, enhance staff productivity, promote cost-effectiveness, and foster a sense of self-discipline, accountability, and responsibility among staff.

Most of the academics expressed support for the university's initiative to implement comprehensive closed-circuit television (CCTV) surveillance systems on campus, citing its significance and justification in ensuring campus safety and security. Implementing CCTV surveillance systems is often considered more efficient and cost-effective, especially when dealing with unfortunate incidents or criminal activities. Also, the significance and utility of a biometric attendance system for university management in monitoring staff compliance with the institution's attendance policy were emphasized. Some academics at BPU have also recognized that implementing the computerized attendance monitoring system has fostered self-discipline and accountability.

BPU also implements the learning management system (LMS) to facilitate and enhance its teaching and learning (T&L) activities, as well as support the related business processes. R5-BPU indicated that most academics favored utilizing LMS due to its potential to enhance the effectiveness of course delivery and student learning, owing to its incorporation of student feedback features. The resources provided within the system have empowered academics to enhance their effectiveness in both traditional and online instructional settings. R7-BPU, a representative from the university management group, conveyed that BPU also undertook the task of monitoring website and email usage. He justified by stating that although some hold a negative view towards it, implementing this approach is beneficial for the overall improvement and interests of the stakeholders involved. Overall, with electronic monitoring, he asserted that there would be a reduction in time, a decrease in the number of personnel hired, and a decrease in overall costs in the long run, likely resulting in widespread acceptance among staff regarding the deployment of these systems to meet the university's needs.

When asked if the participants knew the electronic monitoring or surveillance technologies employed in BPU, all said they did. R4-BPU remarked: *"...Indeed, they [top management] have shared information with us since they began implementing these platforms, and we are aware of this..."* Most participants reported that they possessed a level of familiarity and awareness with the technological tools and platforms employed for the purposes of monitoring and surveillance derived from their respective experiences. Also, they acknowledged the advantages associated with the implementation of electronic monitoring as a substitute for the conventional approach to workplace monitoring and surveillance. The utilization of electronic monitoring was viewed as a more efficient and methodical approach for the storage, recording, analysis, and sharing of data and information. R6-BPU, for example, an assistant professor appointed as MBA Program Director at BPU, commented as follows: *"... I am supervising a team for MBA Program. Occasionally, I engage in the practice of supervising my staff and monitoring their work performance. Based on experience, I have an idea of how electronic monitoring works..."*

Additionally, the majority of participants expressed satisfaction with the functions and efficacy of BPU's Information Technology (IT) Department, as well as favorable feedback regarding the technical support they received. According to R1-BPU, their team, and the IT department are very proficient and resourceful in providing technical support and services to BPU employees since they possess all the required abilities, know-how, and expertise.

Panopticon Potentials of Electronic Monitoring

Drawing upon the electronic panopticon metaphor (Botan & Vorvoreanu, 2005; Manokha, 2020), it can be asserted that these technological platforms implemented at BPU serve as a visible surveillance mechanism through which an invisible 'watcher' (i.e., university management and authorities) monitors the activities of the 'watched' (i.e., staff, students, others). To effectively monitor work behavior and performance, BPU uses electronic monitoring to collect, store, analyze, generate reports, and share data and information about its personnel. The use of electronic monitoring by the university management to monitor work performance has understandably raised some concerns among academics and has had discernible impacts on their performance behavior at the workplace.

R8-BPU, who is also the Head of the IT Department, conveyed that: *"...to help the management, several monitoring systems in place, including ones that are used daily, weekly, monthly as well as every semester. Our everyday monitoring routine includes CCTV, a class monitoring system, and an attendance log system. As per the agreement, teachers must work 35 hours on campus each week, and we monitor their work hours during weekly monitoring. Every semester, the teachers are also being evaluated by their students via questionnaires on their teaching performance. As for the annual appraisal, we also have the Head of the Department to monitor and evaluate the performance of the faculty members for promotion and grievances, and we use the ACR [Annual Confidential Report] for these purposes... we also possess data sources derived from various systems, including user and internet access logs within software applications...."*

Following the declaration of the COVID-19 pandemic by the World Health Organization (WHO) on March 11, 2020, a range of control measures were implemented in Bangladesh starting in April 2020. These efforts included the implementation of multiple government-enforced lockdowns. To mitigate the transmission of COVID-19 throughout the campus community, BPU, like other educational establishments, predominantly ceased its in-person operations in compliance with governmental directives. Following government regulations, the closure of the BPU campus necessitated the relocation of teaching and learning activities to the virtual environment. R2-BPU, who is also a professor, remarked the following: *"...I've had good experiences with electronic monitoring systems. We are handling classes online during this COVID-19 pandemic, and everything is done virtually. Some senior staff members find it challenging, whereas most junior teachers don't have many issues..."* Most academics involved in the research have acknowledged the critical importance of the Learning Management System (LMS) that directly supports T&L activities; the system-embedded student feedback features for performance monitoring were useful for academics. LMS enables them to impose process and outcome control while enhancing their visibility at the university, even during pandemic situations. Several participants expressed the opinion that there is a requirement for the existing LMS at BPU to undergo an upgrade and expansion in order to incorporate more sophisticated technical features that would enhance teaching and learning activities.

Also, while acknowledging the significance of CCTV monitoring systems on campus, a majority of academic members at BPU expressed strong opposition to the idea of extending the use of CCTV cameras to monitor their teaching performance in the classroom. R6-BPU, who has more than twelve years of teaching experience, commented that: *"...As an academic, I always prioritize ethical considerations in both inside and outside my classroom activities, recognizing the diverse range of students with whom I engage. If constant surveillance by CCTV is present, it triggers discomfort within me. However, if I possess a strong ethical*

foundation, my main worry shifts toward my performance, making the presence of the CCTV meaningless. However, I do not like to be monitored in such a way...” An associate professor, R1-BPU, expressed his rejection of the future implementation of CCTV surveillance systems that can include the classrooms and remarked the following: *“...From [BPU] standpoint, ethical practices are upheld when performance measures are applied in a fair and unbiased manner, ensuring equal and accurate evaluation. One aspect I will find unfavorable in the future is using CCTV to monitor and document academic performance in the classroom. Every teacher must be granted the autonomy to instruct following their pedagogical approach. Thus far, at the university level, I don’t see any CCTV in the classroom... I think the implementation of CCTV in the classroom should be avoided...”*

As for the implementation of a biometric attendance system, this has received favorable feedback from most academics, as evidenced by the findings of this study. The application has demonstrated its ability to capture attendance data systematically and reliably compared to a prior attendance system. However, this technology implementation for monitoring staff attendance has raised dissatisfaction among the academic faculty at BPU. This is mostly due to the university's strict attendance requirement, which requires faculty members to be physically present in their offices for 35 hours weekly. From a usage perspective, several participants contended that the current features of the system are not designed to include the time they devote to efficiently engaging in job-related activities while working remotely, thereby demonstrating a bias against them.

According to R8-BPU, the Head of BPU's IT department, there was a discrepancy in the level of acceptance towards implementing electronic monitoring for productivity and performance tracking between senior and junior faculty members. However, most participants agreed that electronic monitoring has a good impact on increasing accountability and promoting discipline in the workplace. Some academics also emphasized that their work performance should be evaluated holistically rather than depending on data collected from a single electronic monitoring platform. R5-BPU, who is an associate professor with more than fifteen years of work experience, commented that: *“... there is a lot of potential for productivity gains with electronic monitoring; nevertheless, the user should be the one making decisions about how to use it, not the people who design the system. The requirements for departments and faculties vary. Because of this, I think there should be more customization possibilities, and all higher education institutions should consider whether some staff members need to be monitored in a certain way....”*

Discussion And Conclusion

Electronic Monitoring Use and Its Impact on Academics at BPU

A successful panopticon occurs when the deployment of electronic monitoring technologies reveals its effects in the workplace, where employees behave and carry out their work obligations under the assumption of ongoing monitoring (Botan and Vorvoreanu, 2005; Manokha, 2020). Based on the research findings, three major platforms used for electronic monitoring practices - a biometric attendance system, CCTV surveillance systems, and a Learning Management System have much impact on academics at BPU. Applying the electronic panopticon metaphor (Botan and Vorvoreanu, 2005; Manokha, 2020), these electronic monitoring platforms are a visible surveillance tool for the invisible 'watcher' to monitor, referring to the university management and authorities, and the 'watched,' i.e., academics for work performance monitoring where the technological features embedded in these technologies put in place the elements for control and discipline in the workplace. The

research revealed that most academics at BPU understood the rationale for using electronic monitoring by university management for productivity and performance monitoring, in addition to meeting the university's needs. Implementing a CCTV surveillance system was deemed essential for campus safety and security. However, most academics rejected its future potential to be expanded in the classroom if its function is to monitor their T&L performance responsibilities. Most academics favored using LMS, which enhances their visibility and provides a certain level of empowerment in their professional roles. Table 2 summarizes the research findings on the effects of electronic monitoring at BPU, guided under the panopticon model proposed by Botan and Vorvoreanu (2005).

Table 2

Research Findings – Effects of Electronic Monitoring at BPU

	Biometric Attendance System	CCTV Surveillance System	Learning Management System (LMS)
Staff Awareness	Yes	Yes	Yes
Panopticon Potentials of the technology	<i>Systematic and reliable attendance system; physical detection; location-based tracking,</i>	<i>Real-time surveillance; fingerprint and face recognition; motion detection; continuous observation;</i>	<i>Enabling some T&L-related tasks visible to stakeholders; Embedded feedback mechanism; Automate some T&L activities; E-mail monitoring</i>
Related Policies, Guidelines, Framework	<i>Staff attendance policy; mandatory 35 hours of weekly office attendance for academic staff</i>	<i>Campus security and safety policy, Anti-harassment policy.</i>	<i>Established IQAC (Institutional Quality Assurance Cell) structure</i>
Triggered reactions	<i>Dissatisfaction about the attendance requirements, Anxiety about new technology and process used.</i>	<i>Fear about the extension of CCTV to be installed in the classroom</i>	<i>Looking forward to LMS upgrading with more advanced features</i>

In Bangladesh, universities, including private higher institutions, are subscribing to the Ministry of Education's directive for performance monitoring, and this unquestionably makes them more receptive to deploying electronic monitoring at the workplace to manage university human resources and work performance, as well as security and safety issues of the university.

"With the new policies in place, we will be able to know how much manpower is needed for a university and we can easily check on unnecessary recruitment. Basically, we want to bring discipline to the universities so that our teachers can be dedicated to research and academic activities only," said Professor Dil Afroza. According to the policy, every department will have to evaluate teachers' performance and send the evaluation to the university authorities. Every university will be required to submit its performance reports to the UGC every six months" (Jasim, 2022).

From 2016 to 2018, the University Grants Commission (UGC) mandated the establishment of Internal Quality Assurance Cells (IQAC) in both public and private universities as part of the Higher Education Quality Enhancement Project (HEQEP) initiated by the World Bank (Genilo, 2022). The primary function of the IQAC was to cultivate a culture of quality within the university. This encompassed enhancing governance and leadership practices, fostering educational innovations, providing support for students and facilitating their progress, improving infrastructure and learning resources, promoting research, consultancies, and extension activities, enhancing teaching, learning, and assessment methods, and developing outcome-based curriculum design (Genilo, 2022).

At BPU, this study discovered that there are related policies, guidelines, and frameworks available in relation to electronic monitoring practices and their rationales within the organization's needs and practices. The establishment of IQAC has facilitated and supported LMS applications among academics. Although electronic monitoring implementation aimed to enhance productivity and work performance following the university's strategic objective of fostering a performance-oriented work environment, not all academics displayed a positive attitude towards their utilization. According to the senior administrator of BPU, in the early implementation stage of any electronic monitoring technology at BPU, some senior faculty members were always the most disgruntled and resisted any platforms to track their productivity and performance due to a lack of adequate technical understanding. On the other hand, junior academics promptly embraced the emerging technologies. R1-BPU, a long-standing academician at BPU with a tenure exceeding 14 years, acknowledged the existence of protocols implemented to document staff attendance and other related engagements, as well as to assess work performance on an annual or periodic basis. He mentioned: *"...it has boosted my performance. I can identify my weakness and rectify it accordingly..."* R3-BPU remarked the following: *"My observation is, if I am professional, then there is nothing to be concerned with. If I know my job, what I am doing, and what my university wants from me, I have nothing to be afraid of; it has not affected my job. My experience is the practice is fair enough".*

Previously, a study conducted by Parvin (2018) expressed concern about a significant lack of strategic management and planning efforts concerning academic, research, and administrative processes to improve academic quality and procedures within the university and the higher education ministry. Based on Parvin's (2018) study, it can be inferred that prior to the enforcement of IQAC at public and private universities in accordance with the directives of the University Grants Commission (UGC), universities in Bangladesh, including private universities, may have exhibited a lack of systematic evaluation of their performance. From this perspective, the decision made by the BPU top management to introduce electronic monitoring tools should be commended as it serves to enhance the academic environment and foster a sense of competitiveness within the workplace.

From the context of individual work performance, triggered feelings and reactions from the academic staff might provide valuable insights into the unintended consequences of electronic monitoring. For example, implementing a biometric attendance system was perceived as advantageous in promoting discipline, attendance, and compliance with policies. However, the introduction of this technology resulted in dissatisfaction among academic staff members regarding the university's attendance policy. Some academics preferred the university management to reevaluate the academic staff attendance policy, claiming that it hinders productivity and performance. An assistant professor, R4-BPU, commented: *"...We are forced to focus solely on time under this policy rather than on productive time. Because of*

the policy, we must be in the office for five to seven hours daily. We adhere to the policy and sometimes do nothing productively. Sometimes, I also cannot focus on my tasks during these hours at my office, but I must stay even though I don't engage in anything productive..." R5-BPU held a strong conviction that while electronic monitoring might effectively regulate the behaviour of academic staff, it did not add *"much value to academic performance."* R6-BPU additionally remarked that the potential consequences on performance may be adverse *"because of the discomfort feeling and raised the level of concern knowing someone from the top management is always watching."* The head of the IT Department, R8-BPU, while acknowledging the discomfort and potential ethical dilemmas associated with the practice of monitoring staff electronically, assured that: *"...we can monitor staff to get the maximum productivity for the university. We do this monitoring system within the campus; we do not deal with the employees' privacy outside the campus".*

The existing body of literature has not extensively addressed the unanticipated consequences of electronic monitoring inside the employment environment of higher education institutions. Numerous research conducted in other employment situations has reported various unexpected consequences. Bain and Taylor (2000), for example, offered a critique of the electronic panoptic system, highlighting its pervasive influence on both the workplace and workers, wherein technology assumes a dominant role that cannot be evaded. According to the findings of Fatouros and Jerrard (2005), it was acknowledged that excessive surveillance measures have the potential to induce feelings of guilt, paranoia, violation, and anger among employees. This phenomenon is likely to have a detrimental effect on both individual and organizational performance, hence impeding management's ability to effectively pursue and attain organizational objectives.

Some Practical Implications

The research findings on the development and use of electronic monitoring systems for monitoring academics and their work performance provide four significant lessons that university administrators, policymakers, and other higher education practitioners can use to understand better how to manage electronic monitoring in the workplace.

The first lesson drawn from the research is that academics demonstrated a favorable perception of electronic monitoring due to their familiarity and prior encounters with the technological platforms. An important consideration for university administrators is prioritizing implementing awareness programs for targeted users. These awareness programs can help to facilitate the smooth integration of technology into users' work routines and mitigate any resistance.

The second lesson is that if an electronic monitoring platform is intended to offer academics greater control, it is likely that they will hold a positive view of its usage. The academics at BPU exhibited a high level of enthusiasm and contentment with the supporting panopticon environment using LMS. Using LMS, they felt empowered and empowered enough to make positive changes in their teaching methods based on the student's feedback generated from the system. The panopticon effect, which fosters a sense of empowerment, is caused by the increased visibility of information made possible by technology, which enables academics to increase their productivity and effectiveness in their work. Therefore, to fully reap the benefits of electronic monitoring, the university's top management and ICT administrators should consider involving academic faculty members in the early stages of technology implementation, particularly when it directly affects their work processes and routines.

The third lesson is that the attitudes of academics towards electronic monitoring can also be influenced by factors such as the proficiency level of the ICT team and the availability of support systems. The outcomes of our study clearly show that the employees' confidence in the ICT team's level of knowledge and skills in operating the monitoring and surveillance using technologies matters most. Hence, upskilling and reskilling opportunities must be offered to the ICT team and security personnel, as well as other staff, to advance their knowledge and skills regarding handling and managing electronic monitoring.

Fourth, it is imperative to develop and establish sound policies and implementation frameworks that are readily accessible and efficiently implemented to regulate the use of electronic monitoring inside the organizational environment. The establishment of a well-defined policy pertaining to the deployment of electronic monitoring, encompassing its intended aims and objectives, as well as the manner in which monitoring data and information will be utilized, is of utmost importance to uphold the ethical application of this technology for surveillance and monitoring. In light of the growing integration of artificial intelligence capabilities in electronic monitoring systems, it has become increasingly crucial for organizations, including universities, to establish comprehensive accountability and governance frameworks and guidelines. These measures are essential in safeguarding the rights of employees in accordance with the organization's policies.

Theoretical Contribution

This study enhances the current theoretical understanding by broadening the applicability of the panopticon idea through the utilization of Botan and Vorvoreanu's (2005) proposed framework, which seeks to examine the unintended consequences of electronic surveillance and monitoring in the workplace. The proposed model suggests that in a certain setting, the dynamic interplay between four essential elements namely - employee awareness of surveillance, technological surveillance potentials, management policy, and maturation - can result in the emergence of both internal and external panopticon effects. Nevertheless, the researchers' model was unable to adequately comprehend the complex dynamics of social behavior that may lead to the emergence of panopticon effects, which are potential outcomes of the designed panopticon. The imposed limitation posed challenges in comprehending the mechanisms by which panopticons are operationalized at the employee level, as well as evaluating the effectiveness of management's implementation strategies and approaches in establishing the panopticon inside the workplace. This research, which incorporates perspectives from academics in Bangladesh and utilizes the case study approach, demonstrates the occurrence of electronic panopticon scenarios. The approach employed in this study, as well as the resulting research findings, have significant contributions not only for researchers, but also for education practitioners, universities, and authorities.

Research Limitations and Recommendations for Future Studies

One limitation of this study, resulting from the lockdown measures used during the COVID-19 pandemic in Bangladesh, is the unavailability of other methods for collecting primary data to triangulate the findings. Future studies undertaking similar research using a qualitative approach should consider, among other methods, conducting observations in a natural fieldwork context to investigate workplace interactions where the electronic panopticon is deployed. More rich insights can be discovered from such research where research participants are not just restricted to the academic staff. This can increase the quality of the research and provide a more robust explanation of the phenomenon under study.

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