

Electronic Performance Monitoring: A Literature Review

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Abstract

Electronic performance monitoring (EPM) is the process/system of monitoring the activities or tasks performed by employees at the workplace using technology. Organizations are now focusing on the technology to improve employee performance through electronic monitoring which in-turn leads to better organizational productivity. EPM enables the organization to monitor and track the data of employee performance through their cell phones, e-mail, and internet usage. EPM not only helps to reduce supervision costs but also provides the organization with faster, cheaper, and relevant performance data for analysis and research. This article focuses on the positive and the negative aspects of implementing EPM in the organization through an extensive literature review. The analysis of the available literature suggests that there are both positive and negative aspects of EPM and its effectiveness and success largely depend on the perceptions of individuals/organizations. The paper recommends that an organization must work on the awareness and perception of employees before implementation of EPM systems to ensure maximum positive outcomes. A bibliometric analysis of research work done in the domain is presented to chart out future research dimensions in the domain.

Keywords

EPM, Technology, Performance Management, Job Satisfaction

I. Introduction

Electronic Performance Monitoring (EPM) refers to organizational systems that use technology to gather, store, analyze, and report employee behavior data to assess performance and observe actions on the job (Alge, 2001). EPM tools include video monitoring, call monitoring, GPS Tracking, wearable electronic safety monitors, electronic time clock system, e-mail, and

internet monitoring (Astor, 2017). Every e-mail, instant message, online posts, phone call, line of written code, shared content, a mouse click, or even a mouse cursor movement generated by employees leave a digital trail allowing organizations to generate patterns of employee behaviors inexpensively and make big data-driven decisions to improve efficiency and innovation” (Lohr, 2013).

Over the years, employee monitoring has taken different forms which include direct supervision by superiors, keeping records and files about employee work-life, use of timetables & work schedules. Recently, the availability and use of faster and affordable information/computer technologies have changed the way organizations monitor work performance. Today, there are numerous ways employees can be watched, reviewed, assessed, and monitored constantly. These days, organizations use clock-in/clock-out systems, GPS tracking on company vehicles, Tracking GPS on company phones with locating apps, Reading company e-mails or other data from company devices, Reviewing employee phone conversations (call monitoring or recording) and/or voice mails, deploying security cameras within the workplace, using security card readers that limit and record access to specific areas, e-surveillance to show how much time is spent on non-work programs on work devices, utilizing screen-recording software and/or keylogging software, etc.

The adoption of information and communication technologies (ICT) collectively known as electronic monitoring or e-monitoring has completely revolutionized how employee monitoring is carried out by making it more effective and cheaper than other forms of monitoring (Lease and Gordon, 2005). Electronic monitoring is now a constant and important feature in modern business organizations.

The objective of the current study is to understand the conceptual framework of Electronic Performance Monitoring by way of an extensive literature review. The paper also aims to identify and summarize the pros and cons of using EPM systems in an organization to recommend the gaps and propose future research directions in the domain.

II. Literature Review

Oyedeki and Okafor (2019) in their study on the relationship between EPM and work performance among Bank employees in Ibadan, Nigeria found a positive relationship between the two. They found that instant feedback, the objectivity of EPM tools along the awareness of employees were the determinants of increased performance. Claypoole and Szalma(2019) in

their study on vigilance employees found increased performance with EPM tools. The study also pointed out that using more than one type of EPM has an incremental effect on performance. Kalischko and Riedl (2020) in their study suggested that EPM has a positive impact on employee performance, however, EPM tools are mainly focusing on employee reactions which limits their application and insight. They suggested that EPM applications must also focus on physiological data such as pulse, heart rate, blood pressure, cheek skin temperature, etc. to investigate the outcomes, stress, and arousal. Bhave (2016) in their study on EPM frequency and employee performance found that the more frequent use of EPM leads to better task performance.

While many researchers have pointed out the positive impacts of EPM, various other researchers have pointed out the negative aspects of EPM on employee and their performances. Stanton and Farrell (1996) in their study on the short-term impact of EPM found that it lowers the feeling of self-work control. They also found that the ability to defer or prevent EPM gives an enhanced feeling of self-control and results in higher performance. Kolb and Aiello (2017) found that employees who are continuously exposed to EPM feel stressed and have an external locus of control. They reported that with constant surveillance the employee feels that they have less control over their performance and hence have low motivation and lower performance. Santuzzi (2016) reported the EPM was closely associated with significant negative effects on job satisfaction, job attitude, and employee commitment. Tomczak, Behrend, Willford, and Jimenez (2020) found EPM linked with the negative perception towards job autonomy and as a perceived violation of the psychological contract for a job role. They also found that the employee feels that EPM is the violation of their privacy rights and is unfair on the part of the employers. Karfors (2018) on the other hand found a mixed result in their research and proposed that there are negative aspects of EPM but the same can be mitigated using social persuasion effectively. Tomczak Lanzo and Aguinis (2018) provided five-pointer guidelines to mitigate the negative consequences of EPM and capitalize on the positive outcomes. They suggested being more transparent, being aware of employee reactions, collect EOM data for work-related aspects only, and use EPM info for developmental purposes while keeping the organizational individuality in perspective.

The review of existing literature suggests that there is no singular view towards the efficacy or the negative aspects of EPM systems. There is also no consensus on the dimensionality of EPM. Various researchers have pointed out the multidimensionality which is contingent upon

the contextual variables. Ravid, Tomczak, White, and Behrend (2019) argued that due to the technological advancement, organizations can now track their employees more extensively, intensely, and discretely and hence can intensify both positive and negative outcomes of EPM to a greater extent. They also suggested that contrary to the popular belief, the EPM is a multidimensional phenomenon for which contextual and psychological variables are applicable and need to be studied.

Sheriff, Jewesimi, and El-Masri (2020) in their comparative study of two organizations in the US and Qatar found that national and corporate cultures have a decisive impact on employee's perception and acceptance of monitoring and need to be managed for better acceptance of EPM. Bhawe (2016) found EPM usage frequency to be linked with Organizational Citizenship Behavior (OCB) but not with Counterproductive Work Behavior (CWB). However, Yost, Behrend, Howardson, Darrow, and Jensen (2019) pointed out the contextual nature of EPM impacting performance. They suggested that the individual reaction to surveillance depends upon the individual differences which affect the Organizational Citizenship Behavior (OCB) and Counterproductive Work Behavior (CWB).

Lund (2018) suggested that there are not sufficient studies to assess the effects of EPM more effectively and hence, more studies are required about monitoring of EPM effects to identify the specifics about the parameters to measure. Jeske and Kapasi (2017) in their paper pointed towards the lack of enough studies to understand the role and context effect on EPM. They also pointed towards the incorporation of the ethical issues about the collection, analysis, and dissemination of the surveillance data. They advised developing a multi-stakeholder perspective to design EPM processes to have a broader perspective towards the EPM.

Figure 1: List of Authors with Maximum Papers

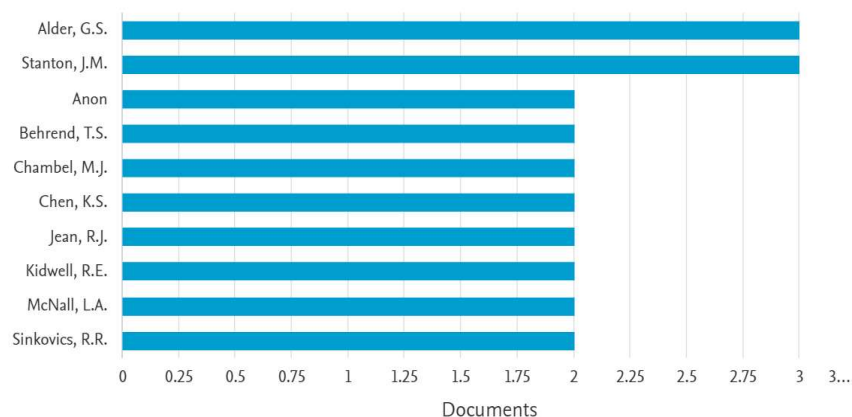
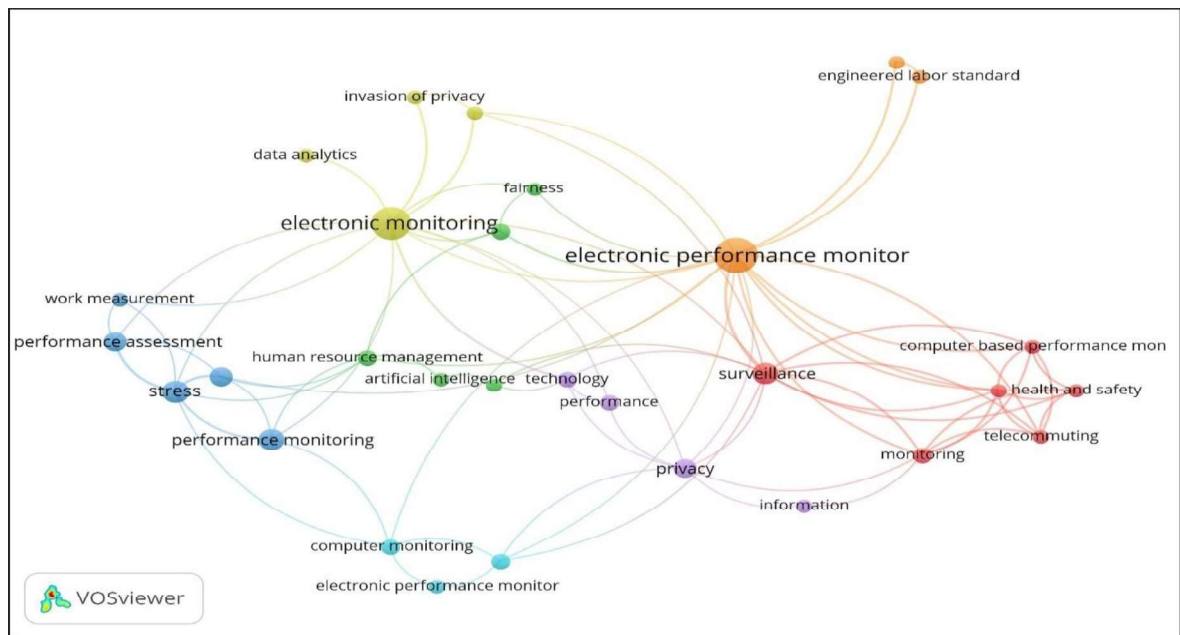


Table 1: List of Papers on EPM with Maximum Citations

Publication Year	Authors	Document Title	ISSN	Journal Title	Volume (Issue)	Citations
2000	Stanton J.M.	Reactions to Employee Performance Monitoring: Framework, Review, and Research Directions	8959285	Human Performance	13 (1)	153
2013	Vikhorev K., Greenough R., Brown N.	An advanced energy management framework to promote energy awareness	9596526	Journal of Cleaner Production	43	124
2000	Ball K., Wilson D.C.	Power, control and computer-based performance monitoring: Repertoires, resistance and subjectivities	1708406	Organization Studies	21(3)	123
2010	Jean R.-J., Sinkovics R.R., Cavusgil S.T.	Enhancing international customer-supplier relationships through IT resources: A study of Taiwanese electronics suppliers	472506	Journal of International Business Studies	41(7)	110
2002	Zweig D., Webster J.	Where is the line between benign and invasive? An examination of psychological barriers to the acceptance of awareness monitoring systems	8943796	Journal of Organizational Behavior	23(5)	107

For further insight into the subject, Scopus papers were explored. In the first go, the keyword “Electronic Performance Monitoring” fetched 7200 papers which further were filtered by restricting the papers to business management and accounting area resulting in 235 papers. These papers were further restricted to Journal papers and English language and in the process, 116 papers were selected for further analysis.

The bibliometric map of the top 116 papers from Scopus suggests various themes and areas related to EPM that indicate the prominent research areas and the directions of future research for less explored areas.



Source: VOSviewer bibliometric map of 101 papers with highest citations from Scopus

III. Pros and cons of electronic monitoring

The review of the literature points out certain positive and negative outcomes of using EPM in organizations. The following section summarizes the Pros and Cons of using EPM in organizations.

Pros:

- EPM helps to uncover (and control) problems like harassment, theft, misconduct.
- It helps to discover where workload may need to be redistributed (i.e., when some groups have too much time for non-work activities).
- EPM helps to monitor and ensure safe practices/SOPs are being followed, and thereby reduce incidences of accidents, potential threats.
- EPM helps to uncover and reduce the instances of employees wasting company time, as they know they are being monitored and are then less likely to do so.
- EPM helps to track hours worked on a specific task.

Cons:

- Employees may feel their privacy has been devalued or violated making employees demotivated.
- EPM may lead to difficulty in retaining employees if monitoring is considered intrusive.
- Monitoring can signify a lack of confidence, which can lead to frustration and a drop in employee morale and productivity.
- EPM information could be potentially misused if it lands in the wrong hands.
- There are legal issues to contend with to ensure the employer remains within legal rights and respects employees' rights.
- The more geographic areas the employer operates in, the more likely these regulations will differ in each area.
- Any monitoring program is only useful if it is scrutinized and results in positive cost-benefit results.
- Sometimes surveillance may create a false sense of security, which can be a risk in and of itself.

IV. Conclusion

An Electronic Performance Monitoring (EPM) system offers a multitude of help to the organizations, including performance management, productivity, and creates a better workplace environment. However, there are several factors to be taken into consideration while implementing EPM in the organization. Concerning the benefits, it provides big-data which help to evaluate and provide better insights about the employee performance which helps the

employees to work enthusiastically. However, the success of an EPM system is highly contextual and largely depends upon the perception of individuals subjected to the EPM.

This literature review has revealed various dimensions of EPM and provides guidelines for the organization to improve performance and mitigate the negative outcomes of EPM. Before the implementation and usage of electronic monitoring in any organization, employees should be made aware and sensitized transparently about EPM usage. Acceptance by the employees of its usage would eliminate any form of unwanted or negative effects EPM would have on the work performance of the employees. The present review also highlights the paucity of sufficient studies to identify the dimensions to evaluate the efficacy of an efficient EPM system and the modalities of including the circumstantial aspects like culture, work-role, etc. in the design of an EPM system. More future studies in the area are warranted to know the effect of EPM on managers and supervisors in different contexts for a better and deeper understanding of the construct.

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