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Workplace surveillance: A systematic review, integrative framework, and research agenda

Oliver G. Kayas

Liverpool John Moores University, 70 Mount Pleasant, Merseyside, Liverpool L3 5UX, United Kingdom

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ABSTRACT

Workplace surveillance has been a relevant issue in scholarly studies since the 1960s. However, given its interdisciplinary nature, research on workplace surveillance is highly fragmented and disjointed, leaving many unanswered questions. A systematic review was therefore conducted to unveil its antecedents, unpack its outcomes, and reveal its conceptual foundations. The review combined a concept-centric framework with a multilevel framework to provide nuanced insights into the literature from organisational, managerial, and employee perspectives. As a result, the review provides a detailed understanding of the tensions, contradictions, and challenges related to existing theorisations of workplace surveillance. A key contribution of this review is the synthesis of the findings into a comprehensive integrative conceptual framework that provides a succinct and informed summary of the antecedents, outcomes, and conceptual foundations that influence research on workplace surveillance. The systematic review also offers a research agenda to help advance the field of workplace surveillance.

1. Introduction

The US Office of Technology Assessment (1987) brought workplace surveillance into the foreground of scholarly debate in the 1980s when it published *The Electronic Supervisor: New Technologies, New Tensions*. It expresses concern that information technologies provide employers with powers of surveillance beyond what is necessary to organise work processes. Workplace surveillance refers to management's ability to purposefully monitor, record, and track the performance, behaviour, and personal characteristics of employees as part of the broader organisational process (Ball, 2010). Traditionally, it is enacted through a dyadic process in which managers manually observe employee activities to ensure organisational expectations are achieved (Lyon, 2001). More recently, traditional organisational processes have been augmented with electronic mediation, enabling management to monitor employees in real-time across public–private boundaries as well as outside traditional organisational boundaries (Ball, 2021; Ravid et al., 2020).

Workplace surveillance is typically perceived as a taken-for-granted element of working life (Ball, 2021; Lyon, 2007). Employees expect managers to collect information about their activities, set them objectives, and monitor and evaluate their performance (Ball, 2010; Lyon, 2007). Employees may even perceive workplace surveillance as good practice if it serves the interests of organisational members and informs

decisions around rewards whilst exposing antisocial behaviours like favouritism (Kayas et al., 2020). However, it can be controversial if it reaches into the personal lives of employees, gathers information about employee characteristics beyond performance, compromises working practices or negatively affects levels of control, autonomy, and trust (Ball, 2021). Given these opposing views of surveillance, it has been suggested that research is split into studies conceptualising it as either coercive or caring; thereby, limiting research on the effects of surveillance because it focuses on one perspective whilst ignoring the other (Sewell & Barker, 2006).

Further issues arise from the use of the terms surveillance and monitoring. Conceptually, both denote similar practices: the collection and use of information to facilitate the management of employees (Ball & Margulis, 2011); thus, implying positive and negative outcomes (Sewell & Barker, 2006). However, the terms are often used interchangeably despite having different meanings depending on the audience (Ball & Margulis, 2011). While industrial and organisational sociologists attach sociopolitical connotations to surveillance, denoting their concern with power, politics, and resistance (Ball, 2010), psychologists define monitoring in neutral terms, focusing on checking a task over time to ensure quality control and determining behavioural adjustments (Petrides, 2005). These differing views have led to researchers underappreciating or even overlooking valuable contributions

E-mail address: o.g.kayas@ljmu.ac.uk.

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in different disciplines. It has also hindered a holistic understanding of the factors leading to the adoption of workplace surveillance as well as the outcomes for organisations and their members. Hence, this review uses the terms surveillance and monitoring interchangeably.

Ball (2010) extends this critique, arguing that the different views of surveillance and monitoring have led to unhelpful ‘epistemological and political commitments’ that splits research. This is highlighted by the many concepts related to workplace surveillance that have contributed to a fragmented field. Electronic monitoring, for instance, refers to gathering employee data with technology to examine their activities (Abraham et al., 2019). Electronic performance monitoring (EPM) more narrowly refers to using technologies to collect and analyse performance information (Ravid et al., 2020), while performance monitoring follows the same process but relies on human intervention (Stanton, 2000). Employee monitoring refers to managers observing and evaluating employees (Martin & Freeman, 2003), whereas computer monitoring refers to observing and assessing an individual undertaking computer tasks (Aiello & Svec, 1993).

In addition to these conceptual issues, many questions about workplace surveillance remain unanswered because the field is highly fragmented due to its interdisciplinary nature, spanning disciplines such as economics, ethics, information management, marketing, psychology, and sociology. Knowledge generation is also accelerating because it has become an increasingly relevant issue with the rapid expansion of information technologies that require new ways of thinking about surveillance (e.g., biometrics and social media).

Despite previous reviews and systematic reviews providing valuable insights on workplace surveillance, persisting issues remain. First, they have methodological issues. For instance, several reviews provide a limited explanation of their methodology (Lund, 1992; Ravid et al., 2020; White et al., 2020), creating an issue regarding replicability (Snyder, 2019). Moreover, Ravid et al. (2020) combine search terms (e.g., “performance monitoring”) instead of using Boolean operators (e.g., “performance” AND “monitoring”) to capture a wider range of literature (Fink, 2020). Other reviews and systematic reviews set a time limit in their search, restricting results and preventing a historical analysis. Ball (2021), for instance, limits searches to the last ten years because she combines references in existing meta-analyses. Using Stanton’s (2000) review as a marker, Ball and Margulis (2011) exclude literature published before 1999; while the scoping review by Masoodi et al. (2021) limits its search to literature published between 2011 and 2021.

Another methodological issue is that none of the previous reviews or systematic reviews analyse the concepts in the literature with an organising framework to systematically (1) uncover new concepts, (2) produce a synthesis of the concepts, (3) show the relationships between the concepts, antecedents, and outcomes, or (4) historically contextualise the concepts (Webster & Watson, 2002). Furthermore, while previous systematic reviews use criteria to scope the literature included in their study (Ball, 2021; Masoodi et al., 2021), they do not use established quality inclusion criteria to increase the overall quality of their analyses (Snyder, 2019). Finally, none of the previous reviews produces a descriptive analysis to reveal the outlets the articles are published in, their methodological orientation, their geographical and organisational focus, or the types of surveillance studied.

Second, existing reviews have issues relating to their focus. Stanton’s (2000) review, for instance, focuses on performance monitoring whilst excluding other related concepts such as computer monitoring. Moreover, Stanton limits insights by focusing on monitoring that employees are aware of rather than also including secretive observations. Ravid et al. (2020) also limit their focus to EPM, excluding broad or traditional monitoring and nonemployee EPM. Other reviews and systematic reviews limit their analyses by focusing exclusively on electronic monitoring (Lund, 1992; Masoodi et al., 2021; Ravid et al., 2020; White et al., 2020). In a different vein, some reviews limit their analyses by focusing on literature published predominantly in the organisational behaviour and occupational psychology fields (Ravid et al., 2020; Stanton, 2000).

Although Ball and Margulis (2011) overcome this issue by focusing on research in organisation studies, management studies, labour process theory, and employment relations, their review restricts its focus to surveillance in call centres.

Masoodi et al. (2021) and Ravid et al. (2020) go some way to consider the antecedents of workplace surveillance, but they do not systematically analyse the individual, organisational, and environmental factors through an organising framework that provides a robust structure to categorise the antecedents within a historical context. This is problematic because the purpose of a high-quality systematic review is reconciliation rather than continued estrangement of the literature (Lim et al., 2021). Furthermore, existing reviews do not identify the specific type of surveillance adopted or the factors leading to its adoption.

Another issue is that previous reviews emphasise the negative outcomes whilst neglecting the positive outcomes (Ball, 2021; Ball & Margulis, 2011; Stanton, 2000). Although White et al. (2020) discuss the positive and negative outcomes, their findings focus on how person and job characteristics moderate positive and negative outcomes. Masoodi et al. (2021), Ravid et al. (2020), and Lund (1992) highlight positive and negative outcomes, but they are ad hoc in nature because they do not use an organising framework to systematically categorise the outcomes at the organisational, managerial, or employee levels. This is problematic because a high-quality systematic review should connect the dots and results in a structured assembly of relationships that exist in the literature (Lim et al., 2021). Finally, despite previous reviews calling for research on organisational and managerial outcomes (Ball & Margulis, 2011; Ravid et al., 2020), existing reviews continue to emphasise employee outcomes, whilst largely overlooking organisational and managerial outcomes.

This systematic review attempts to overcome these issues by producing a comprehensive analysis that integrates and builds upon previously fragmented reviews that are focally and methodologically constrained. Accordingly, the systematic review presented here aims to critically examine the current state of knowledge to clarify the antecedents leading to the adoption of workplace surveillance, the outcomes it produces, and the concepts underpinning research. To do this, the review sets no limit in terms of publication date to provide a historical perspective; uses Boolean operators to capture a wider range of literature; focuses on workplace surveillance and all related concepts that do or do not use electronic mediation; integrates the literature from a range of fields by focusing on research published in all business and management fields; produces a descriptive analysis of the literature; combines a concept-centric organising framework with a multilevel organising framework to analyse the concepts; uses an organising framework to systematically analyse the individual, organisational, and environmental antecedents of workplace surveillance; analyses how the antecedents influence the adoption of different types of surveillance; and uses an organising framework to systematically analyse the positive and negative outcomes (beyond EPM and person and job characteristics) from organisational and managerial perspectives.

The next section describes the systematic review’s methodology. It then provides a comprehensive analysis and synthesis of the existing literature on workplace surveillance, including the antecedents, outcomes, and concepts. Directions for future research are then outlined. The paper concludes by summarising the review’s key contributions and limitations.

2. Methodology

This review drew upon Denyer and Tranfield’s (2009) framework for conducting a systematic literature review. They outline an iterative framework for developing a transparent, inclusive, explanatory, and heuristic review that minimises subjectivity in data collection and analysis (Table 1). The four steps include 1) formulating questions; 2) locating studies; 3) selecting and evaluating studies; and 4) analysing and synthesising studies.

Table 1
Systematic review method.

Step	Purpose and process	Outcome
Step 1: question formulation	Developed research questions with an academic expert on workplace surveillance.	Research questions finalised
Step 2: locating studies	Identified influential articles based on citations and discussions with an academic expert on workplace surveillance.	Influential studies identified
	Analysed influential articles to generate keywords.	List of keywords generated
	Piloted search string using variations of the keywords generated from the influential articles.	Pilot search string generated
	Search string refined and finalised to ensure the collection of relevant articles.	Search string finalised
	Performed comprehensive keyword search of published work in EBSCOHost Business Source Premier and Web of Science. The search focused on the title, keywords, and abstract of the articles.	10,413 articles
Step 3: Study selection and evaluation	Results refined to the English language.	9,689 articles
	Results imported into Endnote using duplicate removal function.	9,199 articles
	Non-journal articles removed using Endnote function.	9,181 articles
	Excluded articles against the 2021 Chartered Association of Business Schools (CABS) academic journals guide quality criteria. Only journals ranked at Grade 3*, 4*, or 4* distinction were included.	2,300 articles
	Duplicate entries removed using Endnote's Find duplicates function.	2,277 articles
	Reading of title, abstracts, and keywords to exclude articles unrelated to workplace surveillance.	391 articles
	Reading of full papers to exclude articles that discuss workplace surveillance as a background concern rather than as the primary focus of the paper.	265 articles
	Snowballed reference lists of final articles to identify any relevant literature not detected during the bibliographic search.	Four additional articles identified
Final set of papers identified.	269 articles in total	
Step 4: analysis and synthesis	Protocol developed to code the articles and record the findings based on the conceptual boundaries and inclusion and exclusion criteria determined in steps 2 and 3.	Protocol developed
	All 269 articles read, analysed, and synthesised. Findings recorded in the protocol.	Analysis completed

2.1. Step one: Question formulation

The investigation is captured in four research questions: 1) What is the current state of research on workplace surveillance? 2) What are the concepts underpinning existing research on workplace surveillance? 3) What leads to the adoption of workplace surveillance (antecedents) and what are the outcomes (consequences)? 4) What are the implications for future research suggested by this study's findings?

2.2. Step two: Locating studies

A crucial criterion for inclusion was that the articles focused on any type of workplace surveillance, including employees surveilling each

other, employees surveilling themselves, organisations and/or managers surveilling employees or vice versa. Given the terms surveillance and monitoring are used interchangeably, the review adopted both terms to ensure relevant literature was included. Moreover, to ensure the study did not limit itself to literature focusing on workplace surveillance, the search string included variations of related concepts e.g., performance monitoring and employee monitoring. Boolean operators were used, ensuring a wide net was cast when identifying the literature. The search string was piloted to ensure it captured appropriate literature (Denyer & Tranfield, 2009; Snyder, 2019). The final search string was refined to "organisation*" OR "organization*" OR "work" OR "workplace" OR "work-place" OR "work place" OR "work-force" OR "work force" OR "workforce" OR "staff" OR "employee*" OR "worker*" AND "surveillance" OR "monitor*". The search strategy focussed on two online databases: EBSCOHost Business Source Premier and the Web of Science Core Collection. The search focused on the title, keywords, and abstract of full-text academic journal articles, resulting in 10,413 articles.

2.3. Step three: Study selection and evaluation

The next stage involved selecting and evaluating the studies using a set of explicit selection criteria to assess whether each article addressed the research questions (Denyer & Tranfield, 2009). The search results were thus limited to English. No limits were set for the publication date to capture a historical perspective. This resulted in 9,689 articles. The results were exported from the database websites and then imported into Endnote to aid information management (Okoli, 2015). When importing the results, Endnote automatically removed any duplicate entries, resulting in 9,199 articles. Any articles identified by Endnote as non-journal articles were also removed (e.g., conference papers), resulting in 9,181 articles.

To ensure quality criteria were met and that rigorous articles were selected, only high-ranked peer-reviewed academic journals were chosen because they provide sufficient theoretical background and leads for additional references (Webster & Watson, 2002). Although this reduces the number of articles included, it increases the quality of the review by only analysing articles that have been through a rigorous peer review process (Cortez et al., 2021; Siachou et al., 2021). Hence, high-ranked journals were selected using the Chartered Association of Business Schools (CABS) 2021 academic journals guide (Cortez et al., 2021; Paula & Criado, 2020; Siachou et al., 2021). Despite having recognised issues with its approach to evaluating research quality (see Tourish & Willmott, 2015), the CABS provides a valuable guide to assessing research quality (Cortez et al., 2021; Paula & Criado, 2020; Siachou et al., 2021). Articles published in journals ranked at grade 3*, 4*, or 4* distinction were thus selected because they publish research that is highly regarded or includes the best-executed research (Cortez et al., 2021; Paula & Criado, 2020; Siachou et al., 2021). This step reduced the number of articles to 2,300. Endnote's 'Find Duplicates' function was then used to manually remove any further duplicates, resulting in 2,277 articles.

The next stage involved reading the title, keywords, and abstract of the remaining articles to remove any that were unrelated to workplace surveillance or that discussed workplace surveillance as a background concern. The 391 remaining articles were then read in full to remove any that were unrelated to workplace surveillance or that discussed workplace surveillance as a background concern. This reduced the number of articles to 265. The remaining 265 articles were then manually reviewed to identify any literature excluded by the search string. These snowballed articles were checked against step 3 filters, resulting in an additional four articles. The final number of articles was 269.

2.4. Step four: Analysis and synthesis

The articles were analysed and synthesised by coding relevant information from each article and capturing it in a protocol developed in Excel (Okoli, 2015; Snyder, 2019). The systematic review was

underpinned by different organising frameworks to ensure a rigorous analysis. It combines a concept-centric framework with a multilevel framework to systematically analyse and synthesise the concepts at the organisational, managerial, and employee levels. This raised the quality of the systematic review by moving it towards a synthesis of what is known about the key concepts in the literature rather than a summary of what different authors have reported (Webster & Watson, 2002). It also embraced a multilevel framework to systematically analyse the individual, organisational, and environmental antecedents influencing the adoption of different types of workplace surveillance. A multilevel framework was also adopted to systematically analyse the positive and negative outcomes of workplace surveillance from the organisational, managerial, and employee perspectives.

3. Descriptive analysis

The 269 articles on workplace surveillance are published in 20 out of the 22 CABS fields (Table 2), covering a wide range of disciplines. The largest number of workplace surveillance studies are located in four CABS fields: *General Management Ethics Gender and Social Responsibility*, *Psychology (organisational)*, *Economics Econometrics and Statistics*, and *Human Resource Management and Employment Studies*. Research on workplace surveillance has also been conducted in other CABS fields such as *Accounting* and *Organisational studies*, therefore, providing encouraging cross-disciplinary insights into the field of workplace surveillance. The 269 articles are published in 108 different journals with 16 of the journals having five or more articles on workplace surveillance (Table 3). The *Journal of Business Ethics* ($n = 15$) and *New Technology, Work and Employment* ($n = 14$) are the two dominant journals. The wide range of CABS fields and journals highlights a topic with implications for a range of disciplines. However, with the literature dominated by four CABS fields and just two journals, there is a lack of critical debate taking place in the many other fields and journals, thereby, limiting insights into workplace surveillance.

The first article on workplace surveillance was published in 1966 in *Administrative Science Quarterly* (Rushing, 1966). The next article was published in 1979 in *Public Administration Review* (Altman, 1979), revealing a significant gap between the publication of the first article. It was not until 1989 that more than one article was published in the same year. This delay could be because workplace surveillance only became a

Table 2
Distribution of articles across the CABS fields.

CABS Field	Article count	Weight
General Management Ethics Gender and Social Responsibility	45	16.73%
Psychology (organisational)	42	15.61%
Economics Econometrics and Statistics	39	14.50%
Human Resource Management and Employment Studies	39	14.50%
Organisation Studies	27	10.04%
Information Management	20	7.43%
Accounting	13	4.83%
Public Sector and Health Care	10	3.72%
Psychology (general)	7	2.60%
Finance	5	1.86%
Operations and Technology Management	4	1.49%
Operations Research and Management Science	4	1.49%
Management Development and Education	3	1.12%
Social Sciences	2	0.74%
Business History and Economic History	2	0.74%
Strategy	2	0.74%
Innovation	2	0.74%
Marketing	1	0.37%
Sector Studies	1	0.37%
International Business and Area Studies	1	0.37%
Entrepreneurship and Small Business Management	0	0.00%
Regional Studies Planning and Environment	0	0.00%
Total	269	100%

Table 3
Distribution of articles across the 16 most common journals.

Journal name	CABS field	CABS ranking	Article count
Journal of Business Ethics	General Management Ethics Gender and Social Responsibility	3	15
New Technology, Work and Employment	Human Resource Management and Employment Studies	3	14
Journal of Business and Psychology	Psychology (organisational)	3	9
Applied Ergonomics	Psychology (organisational)	3	8
Journal of Labor Economics	Economics Econometrics and Statistics	4	7
Academy of Management Journal	General Management Ethics Gender and Social Responsibility	4*	7
Journal of Applied Psychology	Psychology (organisational)	4*	7
Group and Organization Management	Organisation Studies	3	6
Organization Studies	Organisation Studies	4	6
Public Administration Review	Public Sector and Health Care	4*	6
International Journal of Human Resource Management	Human Resource Management and Employment Studies	3	6
Organization Contemporary	Organisation Studies Accounting	3	5
Accounting Research	Accounting	4	5
Personality and Individual Differences	Psychology (general)	3	5
Human Relations	Organisation Studies	4	5
Journal of Management Studies	General Management Ethics Gender and Social Responsibility	4	5

relevant issue amongst scholars when the US Office of Technology Assessment (1987) published *The Electronic Supervisor: New Technologies, New Tensions*. Since then, the number of articles has increased significantly with half published in the past decade (49.81%) (Fig. 1), indicating that this is a growing, yet still nascent area of research peaking in 2020 ($n = 22$).

The review reveals heterogeneity in the methodological orientation of the articles. Most articles were empirical ($n = 229/269$) not conceptual ($n = 40/269$). Of those articles that were conceptual, 31 adopted an analytical approach (i.e., they used an explicit theoretical framework) with the other nine adopting a descriptive approach (i.e., they did not use an explicit theoretical framework). Of the 229 empirical articles, 170 used primary data, 37 used secondary data, 21 used both primary and secondary data, and one paper did not clearly define its approach. Most of the empirical articles were quantitative (68.56%), with the remainder either qualitative (17.9%), mixed (5.68%), or unclear (7.86%). The quantitative methodological approaches adopted included surveys ($n = 65$), experiments ($n = 29$), modelling ($n = 26$), field studies ($n = 6$), and observations ($n = 1$). The qualitative methodological approaches adopted included interviews ($n = 27$), ethnography ($n = 7$), and observations ($n = 4$). The 37 articles utilising secondary data used archival data ($n = 5$), documentation ($n = 10$), surveys ($n = 10$), other sources ($n = 11$), or did not specify the data source ($n = 1$).

Many of the articles were not framed within the context of a particular country or geographic region ($n = 105/269$). Of the 164 articles that were, just eight examined the differences in workplace surveillance between national contexts. One hundred and fifty-two of the articles focused on one country. The review shows heterogeneity in geographical orientation with most articles focusing on the USA ($n = 66$) and the UK ($n = 24$). Of the 156 articles that focused on one country or one geographic region, 76 focused on North America, 54 on Europe, 12 on Asia, 10 on Oceania, three on Africa, and one on South America.

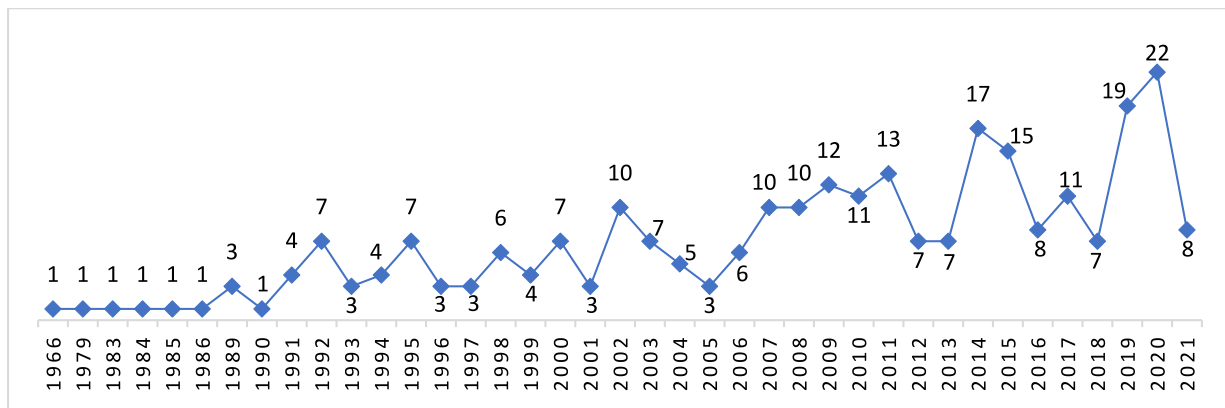


Fig. 1. Number of articles published each year.

Of the 269 reviewed articles, 174 focused on a particular organisation or sector. The most common types of organisations or sectors were call centres ($n = 9$), organisations in the education sector ($n = 8$), telecommunications firms ($n = 7$), banks or financial institutions ($n = 6$), hospitals or health centres ($n = 6$), and manufacturing firms ($n = 5$). A possible explanation for their popularity is that they offer an ideal empirical setting where employees are highly monitored to ensure strict performance, quality, or regulatory requirements are achieved. Organisations in the education sector have become a commonly investigated setting because they have been subjected to successive government policies, forcing them to adopt strict performance management systems that engender surveillance (Kayas et al., 2020). The empirical focus on a narrow set of organisations or sectors is problematic because it limits insights into workplace surveillance in different contexts.

The findings confirm that the terms surveillance and monitoring are used interchangeably in the literature: 188 articles focused on monitoring, 53 on surveillance, 27 on both, and one on other (i.e., quantification). One hundred and three articles focused on surveillance with electronic mediation, 43 without, 35 examined both, and 88 articles did not specify. This review drew upon Sewell's (1998) model of surveillance to examine the types of surveillance reported in the literature. According to Sewell, while employees can be subjected to surveillance as an individual, they also form part of a team, a supervisory relationship, and an organisational and employment relations social system (Ball, 2021). Sewell (1998) argues that the interaction between these elements represent vertical and horizontal forms of surveillance. Vertical surveillance involves monitoring individual employees while horizontal surveillance is enacted through peer group scrutiny in work teams. Vertical surveillance was the most reported type of surveillance in the literature ($n = 220$), followed by a combination of both types of surveillance ($n = 30$), and then horizontal surveillance ($n = 19$) (Table 4).

4. Integrative conceptual framework of workplace surveillance

Drawing on the insights produced through the analysis of the literature, this review's findings are developed into an integrative conceptual framework of workplace surveillance (Fig. 2). The framework synthesises the process of workplace surveillance by explaining the individual, organisational, and environmental antecedents as well as the positive

Table 4
Types of surveillance.

Type of surveillance	Electronic	Non-electronic	Unclear	Both	Total
Vertical	95	29	72	24	220
Multiple	7	6	8	9	30
Horizontal	1	8	8	2	19
Total	103	43	88	35	269

and negative outcomes for organisations, managers, and employees. It also outlines the concepts underpinning research from organisational, managerial, and employee perspectives.

4.1. Antecedents

This review adopts a multilevel framework to examine the individual, organisational, and environmental antecedents influencing the adoption of workplace surveillance. Individual-level antecedents refer to employee micro factors; organisational-level antecedents refer to firm-level factors; and environmental-level antecedents represent the macro-level contextual and institutional factors. This review reveals that 30 of the reviewed articles do not discuss the antecedents whilst most articles just mention them. The 239 articles that do mention or discuss the antecedents include 45 distinct factors (Fig. 2). However, 31 of those 45 antecedents are only discussed once in the literature. Moreover, most articles consider the influence organisational factors have on the adoption of workplace surveillance ($n = 232/269$) with the individual ($n = 15/269$) and environment factors ($n = 6/269$) largely overlooked. Sixteen articles were unclear about the antecedents being individual, organisational, or environmental. The three dominant antecedents identified in this review are performance and productivity (combined) (organisational and environmental levels) ($n = 132/239$), control (organisational level) ($n = 30/239$), and personality (individual level) ($n = 15/239$) (Fig. 3).

4.1.1. Performance

As economic entities, organisations dating back to the 18th century have been concerned with performance to establish whether their goals have been achieved (Lyon, 2001, 2007). With this comes the need to evaluate the organisation and the individuals within it through formal structures that provide legitimate evidence of performance (Bhave, 2014; Stanton, 2000). This is lucidly demonstrated by Josiah Wedgwood's eighteenth-century explanation of how to maximise production through workforce surveillance and Frederick Winslow Taylor's twentieth-century study of how to improve productivity through surveillance embedded in the principles of scientific management (Lyon, 2007; Zureike, 2003). Today, organisations are still driven by the need to observe and evaluate organisational and individual performance. Thus, performance has been and still is the dominant antecedent prompting the adoption of workplace surveillance. Previous reviews confirm performance is a key motivation for workplace surveillance (Masoodi et al., 2021; Ravid et al., 2020; Stanton, 2000). However, Masoodi et al. (2021) focus on the technologies adopted to measure productivity, while Ravid et al. (2020) and Stanton (2000) focus more on the outcomes of performance rather than how or why it leads to the adoption of workplace surveillance.

This review reveals that research from the 1960s to the early 2000s

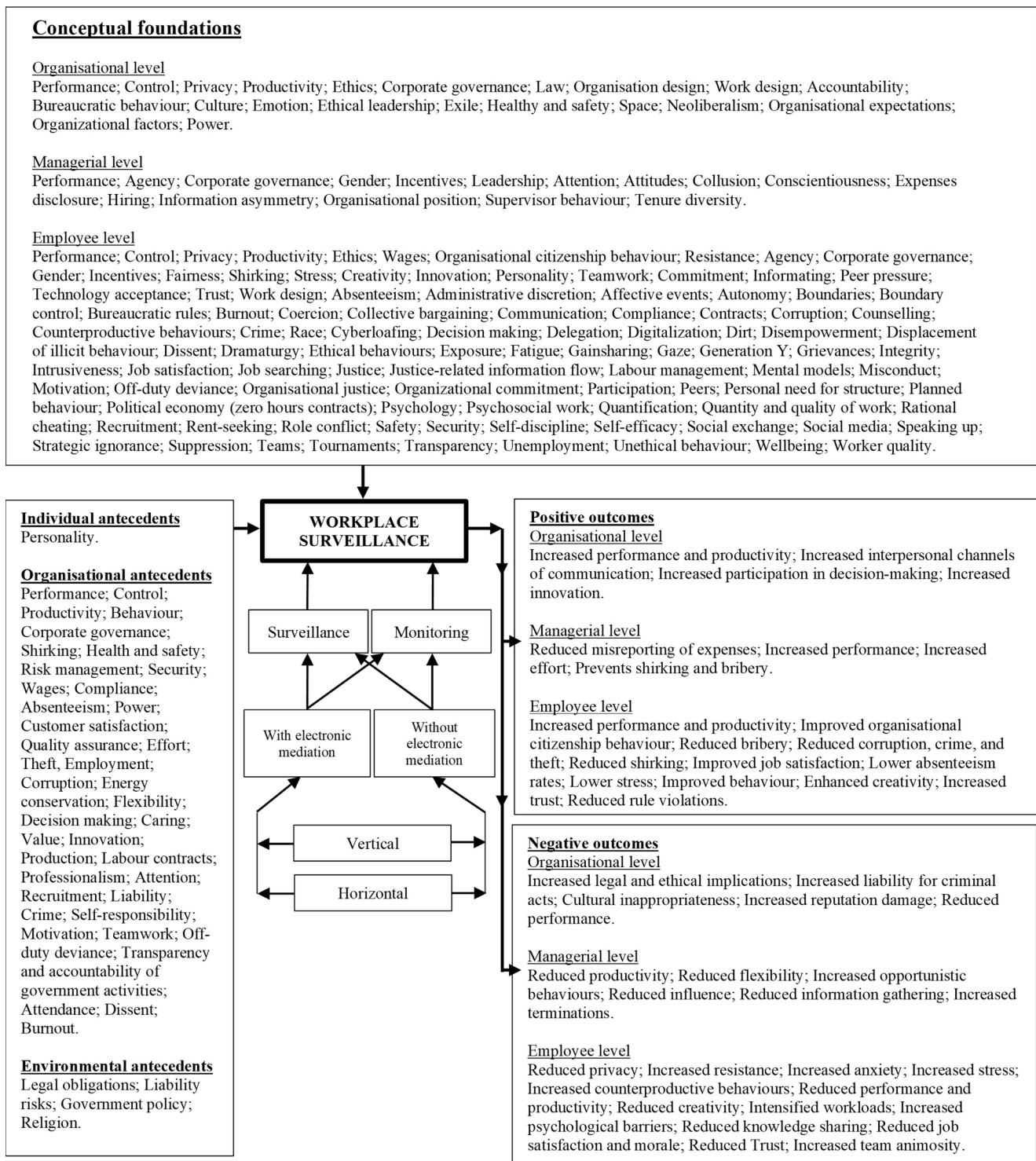


Fig. 2. Integrative conceptual framework of workplace surveillance.

emphasises how traditional performance outputs prompted the decision to adopt surveillance (i.e., productivity and task performance) (e.g., Altman, 1979; Brewer & Ridgway, 1998; Larson & Callahan, 1990; Rushing, 1966). From mid-2000 onwards, studies started considering how other performance outputs influenced the adoption of workplace surveillance. Namely, efficiency (Raz & Blank, 2007), customer satisfaction (Holman et al., 2009), citizen satisfaction (Kayas et al., 2019), effort (Wang & Zhao, 2015), quality (de Menezes & Escrig, 2019), sales (Kuckelhaus et al., 2020), and student satisfaction (Kayas et al., 2020). Organisations started implementing surveillance processes to observe

these varied performance outputs around mid-2000 because they were becoming ever more accountable to a wider range of stakeholders (Striteska & Spickova, 2012); moreover, during this period, off-the-shelf software packages capable of recording and evaluating these varied outputs became readily available and affordable to organisations (Holland & Tham, 2020).

Although this study goes on to confirm previous review claims that organisational factors drive the adoption of workplace surveillance (Ball, 2021; Masoodi et al., 2021; Ravid et al., 2020; Stanton, 2000), it also identifies a small stream of literature explaining how an

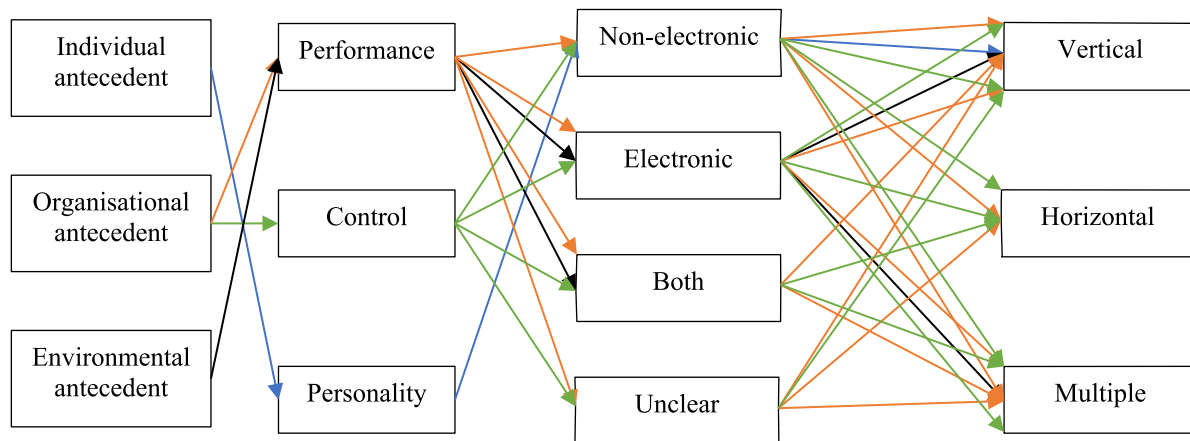


Fig. 3. Antecedents and the types of surveillance adopted.

environmental factor drives the adoption of surveillance for performance purposes. Namely, public sector organisations following the government's mandate to implement policy. For example, Kayas et al. (2019) found that government policy forced the introduction of vertical surveillance, involving the central government monitoring the performance of executives in a local authority who were in turn forced to monitor and scrutinise employee performance. Similarly, Kayas et al. (2020) show how government policy forced universities to measure performance through student evaluations of teaching that influenced the introduction of multiple forms of workplace surveillance. Given the significant role government policy has on public sector organisations, further research is recommended to better understand this underexplored environmental dynamic.

Few studies examine how corporate governance influences the adoption of performance monitoring at the board-level of an organisation. Nevertheless, this review unveils a small stream of literature hitherto overlooked by previous reviews. Unlike monitoring the performance of managers or employees, corporate governance requires organisations in the public, private, and third sectors to adopt formal structures that purposefully monitor board performance. It involves boards introducing processes to monitor directors on behalf of shareholders concerned with performance (Hillman & Dalziel, 2003); directors introducing surveillance to monitor board expense reporting and determine its effect on organisational performance (Chen, 2016); and boards introducing monitoring processes to dismiss directors for illegitimate insider trading on behalf of investors concerned with performance (Cools & van Praag, 2007). With corporate governance playing such a crucial role in the performance monitoring of boards, future research should address the paucity of research to further understand its influence on the adoption of workplace surveillance.

The review identifies vertical surveillance as the most common type of surveillance adopted for performance purposes ($n = 109/132$). Forty-eight of those articles focused on surveillance with electronic mediation, eight without, 19 on both, and 34 were unclear. In addition to showing how vertical surveillance is adopted to deliver performance feedback to employees through wireless computers (Ludwig & Goomas, 2009), these studies have shown, for instance, how it is introduced to assess employees through performance appraisal interviews (Evans & Tourish, 2017). Horizontal surveillance was the next most common type of surveillance adopted to monitor performance ($n = 11/132$). Six of those articles examined surveillance without electronic mediation and five were unclear. These studies have revealed, for example, how team goal monitoring is used to evaluate the curvilinear relationship between team efficacy and team performance (Rapp et al., 2014); and how the introduction of a mutual monitored incentive scheme affects performance (Knez & Simester, 2001). Twelve articles focused on both horizontal and vertical surveillance. Two of those focused on surveillance with

electronic mediation, three without, two on both, and five were unclear.

4.1.2. Control

Organisational control processes dating back to the 18th century were developed to monitor and mould employee behaviour to ensure conformity with organisational expectations (Lyon, 2001, 2007; Ouchi & Maguire, 1975). For instance, Samuel Bentham's eighteenth-century plan for worker control in a monitored factory; Karl Marx's nineteenth-century work on control and surveillance in capitalist enterprises; and Max Weber's nineteenth-century examination of how files and officials create a form of bureaucratic control that stimulates surveillance (Lyon, 2007; Zureike, 2003). William Ouchi's (1975) classic work also conceptualises control as an evaluation process based on the monitoring of performance or behaviour. Given organisational control processes today still require monitoring to function, it inevitably forms one of the dominant antecedents prompting the adoption of workplace surveillance. The review by Ravid et al. (2020) supports this claim, identifying *authoritarian control* as a motivation for EPM. They explain how it represents EPM conducted with no explicit purpose beyond a desire to collect employee information. However, rather than unpacking the reasons why it influences the adoption of workplace surveillance, Ravid et al. focus on the negative outcomes it elicits for those subjected to its effects.

This review reveals that up until 1998, most scholars focused on how organisational control processes were adopted to monitor and evaluate performance or behaviour (e.g., Grant & Higgins, 1991; Sewell, 1998). However, from 1999 scholars started examining how control processes were adopted to monitor and evaluate justice (Kurland & Egan, 1999), commitment (Kinnie et al., 2000), organisational citizenship behaviour (Vilela et al., 2010), delinquency (de Vries & van Gelder, 2015), disclosure (Hansen & Flyverbom, 2015), corporate governance (Leoni & Parker, 2019), and culture (Hafermalz, 2021). Therefore, a motivation for workplace surveillance is the wider compulsion to control organisational members through techniques designed to ensure compliance with these newly uncovered management expectations. For instance, the review highlights how this can manifest in the form of militarised surveillance introduced to control employee bodies and enforce a wage model (Zulfikar, 2019). It has even been shown how a fear of exile (i.e., fear of being left out, overlooked, ignored or banished) acts as a regulating force that shifts the responsibility for visibility onto employees (Hafermalz, 2021).

The review identifies vertical surveillance as the most common type of surveillance adopted to support control processes ($n = 21/30$). Fifteen of those articles focused on surveillance with electronic mediation, three without, and three were unclear. In addition to showing how the introduction of a computerised control system engendered a form of vertical surveillance enabling managers to monitor employees (Grant &

Higgins, 1991), these surveillance studies have examined, for instance, how a digital platform owner introduced surveillance to increase management control (Leoni & Parker, 2019). Horizontal surveillance was the next type of surveillance adopted to monitor control processes ($n = 3/30$). One of those articles focused on surveillance with electronic mediation, one without, and one on both. These articles have shown, for example, how electronic surveillance was introduced to increase management control over teams (Townsend, 2005). Six articles focused on both horizontal and vertical surveillance. Two of those focused on surveillance with electronic mediation, one without, and three on both.

4.1.3. Personality

Previous reviews suggest that individual differences in personality variables moderate links between monitoring characteristics and reactions to monitoring (i.e., agreeableness, conscientiousness, emotional stability, extraversion, trait reactance, self-efficacy, ethical orientation, goal orientation, neuroticism, and openness) (Ravid et al., 2020; Stanton, 2000; White et al., 2020). In addition, this review identifies 15 articles explaining how the personality variable self-monitoring influences the adoption of self-surveillance without electronic mediation. While existing research purports that self-surveillance occurs when an external agent exerts its power over individual employees such that it compels them to self-regulate their behaviour or performance (Kayas et al., 2020), self-monitoring is a personality variable concerned with how individuals actively construct their public selves to achieve social ends (Gangestad & Snyder, 2000). Research has established that an employee's level of self-monitoring can influence job outcomes such as autonomy, performance, and workplace gossip (Bizzi & Soda, 2011; Mehra et al., 2001; Xie et al., 2019). Hence, psychologists measure self-monitoring on a scale of high to low; representing the extent to which employees observe and control their behaviour (Gangestad & Snyder, 2000). High self-monitors regulate their behaviour and act in socially appropriate ways to fit expectations; whereas, low self-monitors value public image less and tend to be true to themselves and behave consistently with their personal beliefs (Bizzi & Soda, 2011; Mehra et al., 2001).

4.2. Outcomes

A multilevel analysis of the positive and negative outcomes was undertaken from the organisational, managerial, and employee perspectives (Fig. 2) (Webster & Watson, 2002). All the previous reviews are dominated by analyses of employee outcomes. Hence, the following discussion focuses on organisational and managerial outcomes because they have been neglected in previous reviews. All the articles focusing on these two perspectives examine either the positive or negative outcomes, whilst overlooking mixed outcomes; thus, exposing a significant opportunity for future research.

4.2.1. Organisational outcomes

Despite limited research examining the positive and negative organisational outcomes of workplace surveillance, this review reveals it can have a significant positive impact on organisational performance.¹ For instance, organisations that actively monitor and screen employees during recruitment can significantly improve performance (Arlotto et al., 2014), whilst increasing the visibility of an organisation's monitoring activities can also improve organisational performance (Jensen et al., 2020). Moreover, if an organisation successfully coordinates the delegation of decision-making to employees and uses monitoring to facilitate that process, then it can lead to improved organisational performance (Ren, 2010). Research has also considered the negative impact surveillance can have on organisational performance. Specifically, how

monitoring intensity can hinder organisational performance by encouraging employees to shirk (Bac, 2007). In a different vein, organisational monitoring practices that induce trust in supervisors can also increase organisational innovation (Liao & Chun, 2016). Thus, if workplace surveillance is carefully configured to induce trust in management, delegate decision-making to employees, and increase visibility about its purpose then organisations can enjoy improved outcomes.

There is also a small body of literature outlining the legal and privacy implications of surveillance from an organisational perspective. Despite organisations being aware of their legal right to monitor employees' computer activities to avert risk, some still fail to adequately monitor and report criminal activities, resulting in financial penalties, reputational damage, and liability for criminal acts (Aalberts et al., 2009). This is a particular issue if a global organisation using electronic surveillance cannot afford the necessary expertise to deal with the differences in national laws, privacy regulations, and cultural dimensions (Kidwell & Sprague, 2009). Under such circumstances, organisations can find themselves facing significant legal, ethical, and cultural issues. In the United States, the Privacy Act exacerbates these issues should an organisation fail to undertake adequate due diligence when gathering employee data (Holland & Tham, 2020; Smith & Tabak, 2009).

4.2.2. Managerial outcomes

Research examining the positive and negative managerial outcomes of workplace surveillance is limited. Nevertheless, this review reveals that high self-monitoring managers are perceived as giving more effort than high self-monitors who are not managers. Despite this, there is no difference in the perceived effort of low self-monitors across managerial and non-managerial positions (Bryant et al., 2011). Improved performance is also related to the time police supervisors spend soliciting subordinate self-reports as well as the time they allocate to those activities (Brewer et al., 1994). In a different vein, workplace surveillance can improve managerial behaviours. For instance, increasing director monitoring and enhancing the transparency of expense disclosures can reduce management expense misreporting (Chen, 2016); whilst an optimally designed monitoring structure can prevent shirking and bribery amongst superordinates with monitoring responsibilities (Xiang, 2020).

Despite these positive outcomes, research shows that monitoring compliance with ethical policies is a frustrating and time-consuming issue that hinders executives' productivity, impedes their flexibility, and encourages opportunistic behaviour when under pressure to achieve sales targets (Bush et al., 2010). Although leaders can employ a surveillance strategy to determine subordinates' compliance with organisational policies and procedures, according to Subasic et al. (2011), surveillance diminishes rather than enhances a leader's capacity to influence attitudes and behaviours. In a different vein, although there is limited evidence that a board of directors with a diverse range of tenure lengths produces superior financial performance within firms, it can produce superior performance monitoring (Li & Wahid, 2018). A manager's ability to monitor a workforce enables them to exploit any project investment information gathered by workers, but it simultaneously reduces their incentive to gather information (Dominguez-Martinez et al., 2014). Elsewhere, high-ranking police officers find themselves more likely to be punished with the termination of duty for deviant behaviour, if their case is subjected to extensive media coverage that exposes offending officers to external pressure from society (Cabral & Lazzarini, 2015). Thus, although the literature shows how workplace surveillance can have positive and negative managerial outcomes, future research should move beyond the narrow focus on performance and behaviour to deepen our understanding of how it can affect managers in other ways.

4.3. Concepts

This is the first review to combine concept-centric and multilevel organising frameworks to analyse the concepts underpinning the

¹ For a detailed discussion of the diverse ways in which the term performance is used, please see Ghalayini and Noble (1996).

literature from organisational, managerial, and employee perspectives (Webster & Watson, 2002). In doing so, the review uncovers 126 distinct concepts (Fig. 2), two of which dominate the literature: performance and productivity (combined) ($n = 45/269$) and control ($n = 16/269$).

4.3.1. Performance

While performance first appeared as a primary concept in the 269 reviewed articles in 1979 (Altman, 1979), it did not feature again until 1985 and then again in 1990. One performance article was published in the 1970s, one in the 1980s, ten in the 1990s, 13 in the 2000s, 16 in the 2010s, and four in the 2020s. Performance is applied as the primary concept in 45 articles, peaking in 2014 and 2020 with four articles in each of those years. Forty articles focus on employees, with just three on managers and two on organisations.

Previous reviews tend to refer to performance as a high-level concept without identifying its subcategories through a systematic analysis (Ball, 2021; Ball & Margulis, 2011; Masoodi et al., 2021; Ravid et al., 2020; Stanton, 2000; White et al., 2020). Consequently, previous reviews only identify a limited number of subcategories through ad hoc analyses, including effort, task performance, keystrokes, customer ratings, efficiency, performance appraisals, location tracking, time logged in and out of a system, number of calls, time spent per call or on auxiliary activities, or the examination of work products (Ball, 2021; Ball & Margulis, 2011; Ravid et al., 2020; Stanton, 2000). Through a concept-centric analysis, this review systematically uncovers additional subcategories of performance, including call quality (Bhave, 2014), cost savings (Gosnell et al., 2020), CO₂ emissions (Gosnell et al., 2020), effectiveness (Larson & Callahan, 1990), umpire ball and strike calls (baseball) (Mills, 2017), financial performance (Eckersley et al., 2014), quantity and quality (Goomas, 2007), and student satisfaction (Kayas et al., 2020). The review also identifies the techniques used to measure these subcategories of performance, including engineered labour standards (Ludwig & Goomas, 2009), forced distribution rating systems (Scholarios & Taylor, 2014), just-in-time (Patibandla & Chandra, 1998), productivity measures (Brewer & Ridgway, 1998), staff performance appraisals (Evans & Tourish, 2017), student evaluations of teaching (Kayas et al., 2020), total quality management (Barron & Gjerde, 1997), work measurement (Schleifer & Shell, 1992), work processing (Ludwig & Goomas, 2009), and a dramaturgical model of the production of performance data (da Cunha, 2013).

The analysis goes on to reveal that most of the antecedents related to the concept of performance were at the organisational level, focusing on effort, performance, and productivity. However, two exceptions were identified: (1) adopting workplace surveillance to reduce counterproductive employee behaviours (organisational-level) (Belot & Schröder, 2016); and (2) the personality variable self-monitoring influencing an employee's likelihood to monitor their performance (individual-level) (Mehra et al., 2001).

Previous reviews emphasise the negative outcomes related to the concept of performance whilst neglecting the positives (Ball, 2021; Ball & Margulis, 2011; Masoodi et al., 2021; Stanton, 2000). Although Ravid et al. (2020) identify contradictory outcomes, they argue there is little evidence that EPM has positive performance effects and only some evidence for moderate negative performance effects. However, this review uncovers multiple articles arguing surveillance improves organisational, team, and individual employee performance (e.g., Bhave, 2014; de Menezes & Escrig, 2019; Gosnell et al., 2020; Larson & Callahan, 1990; Ludwig & Goomas, 2009). These articles argue that performance can be improved through (1) monitoring systems designed to provide employees with customised feedback (Goomas, 2007); (2) monitoring employee performance with appraisals that assess training needs (de Menezes & Escrig, 2019); and (3) coupling performance monitoring with contingent consequences (Larson & Callahan, 1990; Ludwig & Goomas, 2009).

4.3.2. Control

Control first appeared as a primary concept in the 269 reviewed articles in 1991 (Grant & Higgins, 1991). However, it did not appear in the reviewed articles again until 1998 and then in 2004. Two articles were published in the 1990s, three in the 2000s, nine in the 2010s, and two in the 2020s. Control has been used as the primary concept in 16 articles, peaking in 2015 with three articles. Twelve articles focus on employees with four focusing on organisations and none on managers.

Previous reviews tend to adopt an a priori conceptualisation of control as a high-level concept in terms of an individual's ability to control and limit monitoring and its effects (Ball, 2021; Ball & Margulis, 2011; Ravid et al., 2020; Stanton, 2000); elsewhere, it is conceptualised in terms of data collection without a clear purpose (i.e., authoritarian control) (Ravid et al., 2020). By adopting a concept-centric approach, this review differs by embracing an a posteriori approach, seeking to identify how the reviewed articles conceptualise control. Accordingly, although this review reveals that many articles do not specify the subcategory of control underpinning their article, it does uncover several subcategories of control. For instance, whilst Sewell (1998) proposes industrial labour process control that maintains team discipline through peer surveillance, Kellogg et al. (2020) explain how algorithmic control facilitates a form of rational control distinct from technical and bureaucratic control. Ellway (2013) shows how increased surveillance tightens control over certain aspects of work, whilst simultaneously undermining technical and bureaucratic control. In a different vein, Stanko and Beckman (2015) study the Navy's attempts to shape individual attention to exert boundary control. Elsewhere, Crowley et al. (2014) draw on the panopticon, arguing that peer surveillance discourages resistance through normative control. Other articles have examined management control (Aalberts et al., 2009; Oliver, 2002).

Although the antecedents related to the concept of control were control and performance, the review also reveals how organisations adopt workplace surveillance to control individual attention issues i.e., ensuring workers are not distracted from their work by incoming personal messages (Stanko & Beckman, 2015).

Previous reviews highlight negative outcomes related to the concept of control. Specifically, increasing resistance; diminishing the ability to resist; increasing feelings of distrust, insecurity, and stress; viewing procedures as unfair; and improving compliance with organisational requirements (albeit through fear of not being seen as a resister) (Ball, 2021; Ball & Margulis, 2011; Masoodi et al., 2021). Previous reviews also highlight positive outcomes of control. Namely, increasing fairness, organisational justice, performance, and trust; and reducing stress and perceptions that it is an invasion of privacy (Ball & Margulis, 2011; Ravid et al., 2020; Stanton, 2000). However, these positive outcomes only occur when employees are given greater control over monitoring by management (Ball & Margulis, 2011; Ravid et al., 2020). Through the systematic study of the concepts, this review highlights additional negative outcomes, including increased anxiety and performance fatigue (Manley & Williams, 2019), restricted individual liberties (McKinlay, 2013), and reduced morale (da Cunha et al., 2015). It also uncovers two additional positive outcomes. Namely, reduced gossiping (Walter et al., 2021) and increased job satisfaction (Long et al., 2011).

5. Future research

Based on the analysis of the workplace surveillance literature, the following discussion proposes future research directions centred around the critical gaps related to the individual, organisational, and environmental antecedents as well as the outcomes and concepts from the employee, managerial, and organisational perspectives. Table 5 proposes a series of related research questions. Nevertheless, these recommendations are not exhaustive. They are a starting point for addressing a complex interdisciplinary phenomenon that requires further exploration from the scholarly community.

Table 5
Future research questions.

Antecedents
Individual

- How do the big five personality traits and self-monitoring interact to shape individual CEO and board member perceptions of workplace surveillance and what factors explain these interactions?
- How does the interplay between the big five personality traits and self-monitoring influence individual CEO and board member decisions around the adoption of workplace surveillance?
- To what extent do individual CEO and board member perceptions of the potential benefits and drawbacks of specific workplace surveillance practices (e.g., email monitoring and location tracking) vary by personality trait and what factors might explain these differences?
- How do the big five personality traits, self-monitoring, emotional stability, trait reactance, self-efficacy, ethical orientation, and goal orientation interact to shape individual CEO and board member decisions around the adoption of workplace surveillance?

Organisational

- How do the power dynamics between different board members (e.g., executive board members, non-executive board members, directors, and trustees) shape organisational decisions around the adoption of different performance monitoring practices (corporate governance)?
- How does the interplay between the accountability mechanisms of corporate governance and the constraints around data protection laws, labour laws, and industry regulations affect the types of performance monitoring practices adopted (corporate governance)?
- To what extent do financial considerations (e.g., cost of implementation and maintenance) influence organisational decisions around the adoption of different types of monitoring practices (corporate governance)?
- How do board members balance the short-term cost of implementing performance monitoring practices against the potential long-term benefits around improved performance (corporate governance)?
- How do the sociotechnical conditions within an organisation influence the development and implementation of different electronic surveillance practices (e.g., social media monitoring, facial recognition, and location tracking) (the social construction of technology)?
- What are the key factors facilitating the spread of different electronic surveillance practices and how do they shape organisational decisions around the adoption of electronic surveillance (diffusion of innovation)?
- How do users' cognitive beliefs influence their intention to continue using electronic surveillance practices post implementation (information systems continuance)?
- How does an organisation's long-term strategies shape decisions on the implementation of workplace surveillance practices designed to enhance their competitive position (strategic intent)?

Environmental

- How do external stakeholders (e.g., customers, investors, regulators, suppliers, and unions) shape decisions around the adoption of surveillance, the type of surveillance adopted, and any limits placed on its use?
 - What are the key factors that determine the degree of influence external stakeholders have on decisions around the adoption of surveillance and how do these factors vary across different industries and countries?
 - How do organisations balance the demands and expectations of external stakeholders with their own internal priorities when making decisions about the adoption of surveillance?
 - How do different government policies and recommendations influence the adoption and implementation of different surveillance practices in different public sector organisations (e.g., emergency services, schools, and hospitals)?
 - How does government pressure influence decisions to implement surveillance in public sector organisations through the shaping of norms and practices (institutional theory)?
 - How do environmental factors such as the relationship between politics, economics, and public policy influence the adoption of surveillance in public sector organisations (political economy theory)?
 - How do changes in public attitudes towards surveillance and privacy influence the type of surveillance adopted and any constraints placed on its use?
-

Table 5 (continued)

Outcomes*Individual*

- What techniques do employees use to productively resist the management control embedded in workplace surveillance and how effective are they at achieving their desired outcome(s) (productive resistance)?
- How does the implementation of different types of surveillance affect employee perceptions of trust in their employers and what factors moderate this relationship?
- What are the mechanisms through which trust is established, maintained, or undermined in a surveillance context?
- What factors are critical to building trust between employees and employers in a surveillance context?
- To what extent do organisational policies and practices (e.g., privacy policies, governance policies, human resource policies, reporting structures, and communication channels) mitigate the potential negative effects of surveillance on employee trust in their employers?
- How does surveillance affect employees' experience of positive emotions (e.g., happiness, gratitude, and pride) and what impact does this have on their emotional wellbeing (PERMA)?
- How does surveillance affect employees' ability to build relationships with colleagues and what psychological impact does this have on their wellbeing (PERMA)?

Managerial

- How does the introduction of different surveillance practices required or recommended by government affect public sector managers (e.g., performance, productivity, creativity, stress)?
- How does the introduction of different surveillance practices required or recommended by government affect the power dynamics between public sector managers and government?
- What are the specific techniques and strategies managers develop and deploy to resist the effects of excessive control embedded in electronic surveillance (taxonomy of implementers' responses to information technology)?
- How do managers navigate the tension between their role in implementing electronic surveillance practices that they themselves will be subjected to (taxonomy of implementers' responses to information technology)?
- How does the interplay between demographic factors (e.g., age, education, and gender), work-related factors (e.g., contract type (fixed or permanent), pay, position, sector, and years of service), and the personality variable self-monitoring moderate managers' job outcomes (e.g., commitment, productivity, stress, wellbeing)?

Organisational

- How do organisational factors (e.g., size, structure, and culture) moderate organisational outcomes (e.g., efficiency, innovation, and performance) in a surveillance context?
 - How does organisational culture influence the adoption and acceptance of different electronic surveillance practices within the workplace?
 - What are the barriers and enablers within organisational culture that help or hinder the implementation of electronic surveillance?
 - To what extent do stakeholder perceptions (e.g., employees, customers, and the public) of workplace surveillance impact organisational reputation over the long-term?
 - How do negative incidents related to surveillance impact stakeholder perceptions of an organisation's reputation over time?
 - How do stakeholder perceptions of surveillance influence their willingness to engage in business transactions or partnerships with an organisation?
-

Concepts*Individual*

- How does self-control influence employees' ability to negotiate agency in a surveillance context?
- How do employees interpret and apply formal control policies and procedures as well as informal norms and expectations in a surveillance context and how do they impact on their behaviour?
- How does emotional control shape the strategies employees use to regulate and express their emotions in a surveillance context and how does this affect job-related outcomes?
- How do different surveillance practices impact on staff retention in different organisational settings and industries?

(continued on next page)

Table 5 (continued)

- How does surveillance affect an employee's ability to negotiate social privacy boundaries and what impact does this have on their ability to form intimate social relationships with colleagues (social theory of privacy)?
- How does the erosion of negotiated social privacy boundaries through surveillance affect the development of employees' identity (social theory of privacy)?

Managerial

- How do applicant tracking systems affect managers' hiring decisions when the system's recommendations conflict with their own judgment?
- How do different surveillance practices influence managers' willingness to take risks and pursue innovative ideas?
- To what extent (if any) does surveillance motivate managers to innovate more effectively?
- How does a manager's personal ethics influence their decisions when balancing the need for surveillance to achieve organisational expectations with the need to consider employee expectations (e.g., privacy and wellbeing)?
- What strategies do managers develop to deal with ethical conflicts in a surveillance context and what are the factors influencing their decision to deploy them?

Organisational

- How are women affected by surveillance practices used to observe and control their bodies in different industries and countries (feminist ethics of care)?
- How do different surveillance practices affect women's opportunities for advancement in different industries and countries (feminist ethics of care)?
- How does the need to obtain employees' informed consent before implementing and updating surveillance practices affect contractual agreements and expectations (contractualist ethics)?
- What are the ethical implications of contractual agreements in a surveillance context (contractualist ethics)?
- What are the ethical trade-offs organisations make when considering stakeholder expectations around surveillance (stakeholder theory)?
- What organisational values and principles influence ethical trade-offs between different stakeholders and how do they affect organisational decisions associated with surveillance (stakeholder theory)?

5.1. Antecedents

At the individual level, this review found that workplace surveillance research emphasises the outcomes of the big five personality framework and the self-monitoring personality variable from an employee perspective (e.g., [Bizzi & Soda, 2011](#); [Gangestad & Snyder, 2000](#); [Mehra et al., 2001](#); [Xie et al., 2019](#)), whilst overlooking their influence on the decision to adopt workplace surveillance from the perspective of a CEO or other board members (e.g., executive board members, non-executive board members, and directors). Future research could address this gap by exploring how self-monitoring and the different elements of the big five personality framework (i.e., extraversion, agreeableness, openness, conscientiousness, and neuroticism) ([Goldberg, 1993](#)) interact to shape individual CEO perceptions of surveillance, and how these perceptions affect their decision to adopt different surveillance practices. Research could also integrate the big five personality framework with self-monitoring and the other personality traits identified by this review (i.e., emotional stability, trait reactance, self-efficacy, ethical orientation, and goal orientation) to explore how their interaction shapes individual CEO or board member decisions around the adoption of different surveillance practices. Comparative studies could also explore how differences in CEO and board member personality traits influence the adoption of different surveillance practices in different organisational settings, industries, and sectors. These studies could contribute by producing a deeper theoretical understanding of the extent to which different personality traits influence individual CEO or board member decisions around the adoption of specific surveillance practices perceived as more effective at detecting employee deviances or improving outcomes.

In terms of the organisational antecedents, although this review identified a small number of studies focusing on the outcomes of

corporate governance ([Chen, 2016](#); [Cools & van Praag, 2007](#); [Hillman & Dalziel, 2003](#)), there is a lack of research investigating how the mechanisms of corporate governance (e.g., auditing processes, regulatory oversight, and board members) influence the decision to adopt performance monitoring practices. Research could contribute to this gap by examining how the power of different board members (e.g., executive board members, non-executive board members, directors, and trustees) shape decisions around the adoption of performance monitoring practices. For example, if and how executive board members can override board or other stakeholder concerns around the adoption of performance monitoring. Research could also explore how the interplay between the accountability mechanisms of corporate governance and the constraints around data protection laws, labour laws, and industry regulations affect the types of performance monitoring practices adopted. This could contribute by unveiling the key factors influencing the adoption of specific performance monitoring practices in different countries, industries, and sectors. It could also help organisations develop strategies for implementing performance monitoring practices that are effective and compliant with relevant laws and regulations. In a different vein, corporate governance research could explore how the financial investment required to implement and maintain performance monitoring practices affect board decisions related to the type of monitoring practices adopted. This could contribute by providing insight into how board members balance the short-term cost of implementing performance monitoring practices against the potential long-term benefits around improved performance.

This review also found that research has failed to take advantage of different theories to analyse the organisational factors leading to the development and adoption of different electronic surveillance practices (e.g., social media monitoring and facial recognition). Drawing on the social construction of technology ([Bijker et al., 1987](#)), for example, could produce insight into the sociotechnical conditions influencing the development of specific electronic surveillance practices in different organisational settings. Guided by the diffusion of innovation theory ([Rogers, 1962](#)), future studies could also produce new insights into the conditions influencing the adoption and spread of electronic surveillance practices in different industries and countries. This could be achieved by examining the characteristics of the technology itself, the characteristics of the organisations that adopt the technology, the sociocultural context within which the technology is introduced, and the communication channels through which information about the technology is disseminated. Future studies could also draw on the theory of information systems continuance by [Bhattacharjee \(2001\)](#) to explore how users' cognitive beliefs influence their intention to continue using electronic surveillance practices post implementation. This could produce new insight into the ways in which user satisfaction with electronic surveillance shapes post adoption behaviour. Furthermore, research guided by [Hamel and Prahalad's \(2010\)](#) theory of strategic intent could explore how an organisation's long-term strategies shape decisions on the implementation of workplace surveillance practices designed to enhance their competitive position. Such a study could produce new insight by highlighting whether different surveillance practices achieve intended strategic performance improvements by identifying the factors contributing to success or failure.

In terms of the environmental antecedents, this review only uncovered a small number of studies exploring how external stakeholders influence the adoption of surveillance (e.g., [Kayas et al., 2020](#); [Kayas et al., 2019](#)). To address this gap, future studies could explore how overlooked stakeholders (e.g., customers, patients, regulators, students, suppliers, and unions) shape decisions around the adoption of surveillance, the type of surveillance adopted, and any limits placed on its use. Such studies could contribute by examining, for example, how organisations balance regulatory requirements to adopt surveillance practices with their internal priorities and financial constraints. Research is also needed to expand the scarcity of studies examining how and why public sector organisations adopt surveillance practices recommended or

required by government. Future studies could thus draw on institutional theory to explore how government pressure influences decisions to adopt surveillance in public sector organisations. Such a study could contribute by expounding how political pressure to implement government policy shapes norms and practices in public sector organisations, including decisions around the implementation of surveillance practices. Political economy theory could also provide a valuable framework to study how environmental factors such as the relationship between politics, economics, and public policy shape organisational decisions that prompt the adoption of surveillance. Such a study could highlight the extent to which political interests, power dynamics, and budgetary constraints shape the government's support for the adoption of surveillance in public sector organisations. These studies could also contribute by determining the role different government policies and recommendations have on the adoption of surveillance practices in different public sector organisations (e.g., emergency services, schools, and hospitals).

Future studies should also address the lack of research focusing on the influence the wider societal context has on the adoption of workplace surveillance. Studies could contribute to this gap by examining how changes in public attitudes towards surveillance and privacy influence the type of surveillance adopted and any constraints placed on its use. Researchers are encouraged to undertake these studies in different countries; particularly, overlooked developing countries and the global south to produce novel contextual insights beyond developed countries in a western context.

5.2. Outcomes

Although this review found that most studies focus on the outcomes of surveillance at the employee level, there are still opportunities to produce novel theoretical insights. For example, surveillance studies focusing on control tend to conceptualise resistance as an antagonistic process between employees and managers (e.g., Kayas et al., 2019; Townsend, 2005). Future research could instead draw on the theory of productive resistance by Courpasson et al. (2011) to analyse how employees can work with managers to encourage change that benefits both managers and employees. This could produce novel theoretical insights into the techniques employees use to productively resist the management control embedded in workplace surveillance. In addition, the review identifies a paucity of research examining how different types of surveillance (i.e., horizontal or vertical surveillance) affect employee perceptions of trust in their employers. Studies on trust could contribute to this gap by providing insights into the mechanisms through which trust is established, maintained, or undermined in a surveillance context. Studies could also contribute by identifying the factors critical to building trust between employees and employers in a surveillance context and how trust can be fostered in the face of invasive surveillance practices.

Furthermore, this review found that research has inadequately considered the impact electronic surveillance has on employee wellbeing. Future studies could thus draw on the PERMA model of wellbeing (positive emotion, engagement, relationships, meaning, and accomplishment) by Seligman (2018) to explore how different types of electronic surveillance (e.g., keystroke monitoring, location tracking, and social media monitoring) impact each of these wellbeing elements. Such studies could contribute in several different ways. For example, examining how surveillance affects employee experiences of positive emotions (e.g., happiness, gratitude, and pride) could contribute to a deeper understanding of the psychological impact surveillance has on employees' emotional wellbeing. It could also provide valuable insight on how to minimise the negative effects of surveillance on employees' emotional wellbeing. In addition, future research could use the PERMA model to explore how surveillance affects employees' ability to build positive relationships with colleagues and managers. Research could reveal, for example, how different types of electronic surveillance

undermine relationships and wellbeing by increasing distrust and suspicion between employees and managers. Conversely, research could contribute by showing how different types of electronic surveillance improve wellbeing by helping employees and managers to build positive relationships underpinned by an increased sense of belonging and a willingness to collaborate and engage in teamwork.

In line with previous reviews, this systematic review found that few studies have answered previous calls to examine surveillance outcomes from managerial and organisational perspectives (Ball & Margulis, 2011; Ravid et al., 2020). From a managerial perspective, future studies could address the absence of research analysing how surveillance practices required or recommended by government policy affect the performance of public sector managers. This could unveil the power dynamics between managers and government, whether managers perceive government policy as an extension of authority, and how this perception affects their performance. In addition, with this review finding that existing research is dominated by studies focusing on how employees resist surveillance (e.g., Ellway, 2013; Townsend, 2005), future research could instead explore how managers resist surveillance by drawing on the taxonomy of implementers' responses to information technology (Rivard & Lapointe, 2012). This could contribute by providing insight into the specific techniques and strategies managers develop and deploy to overcome what they perceive to be excessive control embedded in electronic surveillance.

In a different vein, studies could investigate how the interplay between demographic factors (e.g., age, education, and gender), work-related factors (e.g., contract type (fixed or permanent), pay, position, sector, and years of service), and the personality variable self-monitoring moderate managers' job outcomes (e.g., commitment, productivity, stress, wellbeing). Studying demographic and work-related factors could produce new insight into the interplay between individual self-monitoring differences and their impact on managers in a surveillance context. For example, whether managers with high or low levels of self-monitoring who are employed on fixed contracts experience different performance outcomes than those with high or low levels of self-monitoring on permanent contracts.

This review also established that there is a paucity of surveillance research examining how organisational factors, such as size, structure, and culture, moderate organisational outcomes. This gap provides an opportunity to extend knowledge on the conditions in which surveillance is more likely to be effective, whilst providing insight into the outcomes of the interplay between organisational factors, surveillance processes, and performance. Research has also inadequately analysed how organisational culture affects the implementation of electronic surveillance practices. Examining how organisational culture shapes attitudes towards innovation, risk-taking, and change management, for example, could help identify the barriers and enablers affecting the implementation of electronic surveillance. Another opportunity lies in this review's finding that there is an absence of research examining how electronic surveillance affects organisational reputation over the long-term. Examining various external stakeholder perceptions (e.g., employees, customers, the public), for example, could contribute by producing longitudinal insights into the impact different electronic surveillance practices have on organisational reputation.

5.3. Concepts

Although this review reveals that control dominates the workplace surveillance literature (e.g., Aalberts et al., 2009; Crowley et al., 2014; Ellway, 2013; Kellogg et al., 2020; Kurland & Egan, 1999; Sewell, 1998; Stanko & Beckman, 2015), there are still opportunities to contribute through overlooked subcategories of control at the employee level. For example, drawing on self-control could advance current understandings of how employees negotiate agency in a surveillance context. Guided by informal and formal conceptualisations of control, studies could produce new insights into how formal policies and procedures are interpreted

and applied by different employees and how informal norms and expectations shape employee behaviour in a surveillance context. Research on emotional control could also contribute by exploring the strategies employees use to regulate and express their emotions in a surveillance context and how this affects job-related outcomes. Overlooked subcategories of performance also provide an opportunity to contribute to the workplace surveillance literature. Performance studies on staff retention, for example, could advance knowledge on how surveillance affects employee commitment, satisfaction, and engagement. Performance studies on employee endurance could also provide a better understanding of how surveillance affects wellbeing, stress, and workload management; particularly, the ability of employees to cope with stress and manage their workload in a surveillance context.

This review also found that 12 out of the 13 articles underpinned by privacy focus on informational conceptualisations of privacy at the employee level rather than alternative conceptualisations such as communication privacy, environment privacy, individual privacy, social privacy, or physical privacy. Future studies guided by the social theory of privacy (Steeves, 2009), for example, could produce new theoretical insights into the ways in which workplace surveillance impacts employees' ability to socially negotiate personal privacy boundaries through intersubjective relations. This research could also produce an enriched understanding of how the erosion of socially negotiated privacy boundaries through surveillance undermines employees' ability to develop their identity through intimate social interactions with trusted colleagues.

From a managerial perspective, future research could integrate neglected concepts such as decision-making and hiring to produce new insights. For example, examining how applicant tracking systems affect managers' hiring decisions could reveal how likely they are to rely on the recommendations made by the system, even if the recommendations conflict with their judgment. It could also reveal whether managers are more or less likely to reject candidates who do not meet the criteria specified by the system, even if the candidates have other valuable qualities. Opportunities also arise from the dearth of research exploring how surveillance affects innovation amongst managers. Future studies could contribute to this gap by examining how surveillance influences managers' willingness to take risks and pursue innovative ideas. These studies could show that surveillance increases accountability and motivates managers to focus on measurable goals, leading to more effective innovation. Conversely, it could show that surveillance creates a climate of fear and distrust amongst managers, discouraging them from taking risks or pursuing unconventional ideas.

In a different vein, this review identified just ten articles underpinned by ethics. Only five of those articles examined ethics from a managerial perspective with the other five examining it from an organisational perspective. Future research could therefore address the absence of studies investigating how the personal ethics of managers influences their decisions. Particularly, when balancing the need for surveillance to achieve organisational expectations with, for example, employee privacy, satisfaction, and wellbeing. This could contribute by identifying the potential ethical conflicts managers face and what strategies (if any) they develop to overcome them. At the organisational level, given the lack of research examining the ethical implications of surveillance beyond deontological and teleological perspectives (i.e., Alder, 1998), drawing on a feminist ethics of care (Gilligan, 1982), for example, could contribute by elucidating the gendered implications of organisational surveillance. This could reveal how women are disproportionately affected by surveillance practices used to observe and control their bodies or limit their opportunities for advancement. A contractualist conceptualisation of ethics (Scanlon, 1998) could also guide future research exploring the agreements and expectations between organisations and employees regarding surveillance practices. Such a study could focus on informed consent, both in terms of the initial employment contract and any subsequent updates to surveillance practices. By examining the need for organisations to obtain employees'

informed consent before implementing and updating surveillance practices, this research could provide an enhanced understanding of the ethical implications of contractual agreements in a surveillance context. Finally, future studies could address the lack of ethics research by drawing on stakeholder theory to explore the ethical trade-offs organisations make when considering different stakeholder expectations around surveillance. Such a study could contribute, for example, by identifying the values and principles at play when organisations make ethical trade-offs associated with employee privacy, organisational performance, and customer satisfaction.

6. Conclusion

This paper aimed to develop a deeper understanding of workplace surveillance through a systematic review of the literature published in peer-reviewed academic journals across a range of disciplines. The systematic review was thus underpinned by different organising frameworks to produce a rigorous analysis of the literature. These organising frameworks were important to produce a holistic understanding that builds upon previously fragmented reviews and overcomes their shortcomings with a comprehensive analysis of the literature.

One of the review's key contributions is the synthesis of the findings into an integrative conceptual framework that serves as a knowledge map to (1) explain the process of workplace surveillance and (2) communicate the relationships between the concepts, antecedents, and outcomes of workplace surveillance. The framework synthesises the process of workplace surveillance by identifying 126 concepts underpinning the literature from the organisational, managerial, and employee perspectives; uncovering 45 individual, organisational, and environmental antecedents influencing the adoption of different types of workplace surveillance; and unveiling the positive and negative outcomes for organisations, managers, and employees. The framework has important implications for both academics and practitioners because it is the first review to provide a quick snapshot illustrating the process of workplace surveillance and its positive and negative outcomes for stakeholders.

Whilst confirming that performance and control are the dominant antecedents leading to workplace surveillance, this review uncovers gaps neglected by previous reviews (Masoodi et al., 2021; Ravid et al., 2020; Stanton, 2000). Specifically, how corporate governance influences the adoption of board-level performance monitoring; how the environmental factor, government policy, drives the adoption of performance monitoring; how newly identified performance outputs drive the adoption of workplace surveillance; how control processes are not just introduced to monitor employee behaviour or performance, but to control commitment, corporate governance, culture, delinquency, justice, disclosure, and organisational citizenship behaviour; and how performance, control, and personality influence the adoption of different types of surveillance (Fig. 3). Furthermore, while previous reviews identify personality variables influencing the adoption of surveillance (Ravid et al., 2020; Stanton, 2000; White et al., 2020), this is the first review to identify and elucidate how the personality variable self-monitoring influences the adoption of self-surveillance.

Unlike previous reviews emphasising the positive and negative employee outcomes (Ball, 2021; Ball & Margulis, 2011; Masoodi et al., 2021; Ravid et al., 2020; Sewell & Barker, 2006; Stanton, 2000; White et al., 2020), this review contributes by unpacking the positive and negative organisational and managerial outcomes. Moreover, despite Ravid et al. (2020) acknowledging the contradictory outcomes of EPM, they argue there is little evidence that EPM has positive performance effects. However, this review uncovers multiple articles arguing workplace surveillance improves organisational, team, and employee performance.

Because none of the previous reviews undertakes a concept-centric analysis of the literature (Ball, 2021; Ball & Margulis, 2011; Masoodi et al., 2021; Ravid et al., 2020; Sewell & Barker, 2006; Stanton, 2000;

White et al., 2020), they focus on performance and control as high-level concepts whilst ignoring their complex and multifaceted nature. This review contributes by identifying the many subcategories of these high-level concepts and places them within a historical context. It also highlights the relationship between these concepts and the antecedents and the positive and negative outcomes.

This review contributes by being the first to analyse the CABS fields and journals underpinning the literature. In doing so, it highlights that the literature is dominated by just four CABS fields and two journals, indicating a lack of critical debate taking place in many relevant fields and journals. It is also the first review to examine the contextual and methodological underpinnings of the literature, thus, producing previously unrevealed insights. Namely, (1) that many articles are not framed within the context of a particular country; (2) that developing countries are underrepresented; (3) that studies focus on a limited range of organisations or sectors; and (4) that quantitative methods dominate the field.

Building upon the insights from this review, a set of exciting research directions are also presented, aimed at encouraging scholars to advance the theoretical and contextual insights of the concepts, antecedents, and outcomes of workplace surveillance.

Like any other systematic review, this study has limitations. First, the keywords and use of specific databases could have omitted relevant studies. Second, only including articles published in peer-reviewed academic journals listed in the CABS journal guide could have excluded relevant studies. Despite these limitations, this review represents an extensive analysis of the current body of available literature on workplace surveillance, meaning it may not be necessary or feasible to include every single publication.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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