



**Australian  
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University**

**The Effect of Invasiveness of Electronic Performance  
Monitoring on Employee Wellbeing and Performance**

Chen Wang

Research School of Accounting  
College of Business and Economics  
The Australian National University

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## **Declaration of Originality**

I hereby declare that this thesis, entitled ‘The Effect of Invasiveness of Electronic Performance Monitoring on Employee Wellbeing and Performance’, is the result of my own independent research. To my best knowledge, this thesis does not contain any material previously submitted for a degree or diploma in any university, and it does not contain any material previously published or written by another person except where reference is made in the text.

Signed: \_\_\_\_\_ On: \_\_\_\_\_ / \_\_\_\_\_ /

Chen Wang

06/02/2024

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## **Abstract**

Advanced and innovative technologies have significantly accelerated the organisational adoption of electronic performance monitoring (EPM), which involves using technological means to observe, record and analyse information directly or indirectly related to employee job performance. The COVID-19 pandemic has further expedited the adoption of EPM in response to the substantial shift from traditional on-site work to remote work. Despite the widespread use of EPM, we have a limited understanding of the effects of technology-based monitoring on employee wellbeing. This thesis aims to investigate the impact of EPM invasiveness on employee wellbeing and performance.

This thesis presents three studies. The first study develops and validates a multifaceted measure for EPM invasiveness. Building upon an existing theoretical framework, this study provides empirical evidence suggesting that EPM invasiveness is a multidimensional construct, comprised of EPM scope, EPM target, EPM constraints and EPM control. EPM scope and EPM target refer to the number of forms of electronic monitoring and the type of information collected by these monitoring forms, which indicate the invasive use of EPM. EPM constraints and EPM control represent the organisation's constraints and control on EPM, limiting the invasive use of EPM. The validated scale is then used in the second and third studies of this thesis.

The second study investigates the impact of the invasiveness of EPM on employee perceptions of workplace isolation in the remote work context. Prior research highlights that workplace isolation is a salient wellbeing issue for remote-working employees. This study conducted an online survey and found a positive relationship between the invasive use of EPM and employee perceptions of workplace isolation, and this relationship is mediated by employees' sense of control at work. The findings also

suggest that an organisation's constraints and control regarding EPM use are effective in reducing the negative impact of the invasive use of EPM on employees' sense of control and workplace isolation.

The third study examines the impact of EPM invasiveness on employee burnout and performance. Prior research suggests that technological-based changes in management controls, such as EPM, can cause work stress, which implies increased employee burnout. In this study, the survey findings reveal a positive relationship between the invasive use of EPM and employee performance, which is negatively mediated by employee burnout at work. Further, this study shows that an organisation's external corporate social responsibility activities moderate the direct effect of invasive EPM on employee burnout and the indirect effect of invasive EPM on employee performance through employee burnout at work.

Overall, this thesis contributes to the management control literature by examining the effects of technology-based monitoring (i.e., EPM) on employee wellbeing and performance. The findings in this thesis extend knowledge on the role of performance monitoring in managing employees in the remote work environment. This thesis also contributes to the EPM literature by developing and validating a multifaceted scale for assessing the invasiveness of EPM.

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## **Chapter 1: Introduction to the Thesis**

### **1.1 Research Question and Motivation**

Advanced and innovative technologies have become increasingly prevalent in the workplace, serving as valuable tools that facilitate employee work and help organisations manage their workforce (The Economist 2022; Ninaus et al. 2021; Waizenegger et al. 2020). The COVID-19 pandemic expedited the adoption of new monitoring technologies as a response to the significant shift from traditional on-site work to remote work (Abril and Harwell 2021; Hughes 2021). The implementation of advanced technology also transforms management controls in profound ways. This transition led to a transition from *ex post* to *ex ante* management controls such as electronic performance monitoring (EPM), which involves the use of technological means to observe, record and analyse information directly or indirectly related to employee job performance (Bhave 2014; Ravid et al. 2020). Various forms of EPM, particularly real-time monitoring such as video monitoring, call monitoring, GPS tracking, keystroke monitoring, internet usage monitoring, wearable electronic safety monitors and electronic time clock systems, have already been widely implemented in practice (Golden and Chemi 2020; Wang et al. 2021).

Complementing traditional monitoring practices that emphasise intermittent direct supervision and measurement of performance outcomes (Ajunwa et al. 2017; Alder et al. 2007), EPM expands organisations' capabilities to perform real-time monitoring (Holt et al. 2016; Raveendhran and Fast 2021) and enables organisations to assess not only employee performance outcome data but also their work process and skill data (Kellogg et al. 2020; Nappert and Bamber 2023). These benefits make EPM a valuable tool for organisations, particularly in remote work settings, to meet their

needs for performance monitoring and management (Ravid et al. 2023; Yang et al. 2022).

Organisations are increasingly relying on EPM for data collection to overcome the constraints of physical distance and time (Golden and Chemi 2020; Holland et al. 2015) which raises concerns about unprecedented and invasive employee monitoring. Prior literature suggests that the invasive nature of EPM inevitably has negative impacts on employees, including reduced job autonomy (e.g., Jeske and Santuzzi 2015), increased work stress (e.g., Kelliher and Anderson 2010; Lautsch et al. 2009), lower job satisfaction (e.g., Thompson et al. 2009) and altered employer–employee relationship (e.g., Raveendhran and Fast 2021). This could lead to more negative attitudes towards performance monitoring, potentially resulting in employee wellbeing issues and subsequently affecting performance.

Despite the prevalence of EPM in practice, theoretical and empirical research is lagging behind in analysing the effects of EPM on employee wellbeing and performance. To fill this research gap, this thesis explores the invasiveness of EPM, defined as the intrusion that EPM imposes on employees' control over their personal or work-related information and activities (Ravid et al. 2020) and investigates its impacts on employee wellbeing and performance. Addressing wellbeing issues and related negative impacts on performance associated with EPM adoption is crucial for organisations to maintain a healthy and productive workforce in the remote work context (Kelliher and Anderson 2010; Ravid et al. 2023). Specifically, this thesis examines the following research question:

*RQ: Does the invasiveness of electronic performance monitoring (EPM) affect employee wellbeing and performance in the remote work context?*

The thesis comprises three studies. Given the absence of an established measure for assessing the invasiveness of EPM, the first study develops and validates a scale for measuring EPM invasiveness. The second study investigates the impact of the invasiveness of EPM on employee perceptions of workplace isolation in the remote work context. The third study examines the effect of the invasiveness of EPM on employee burnout and performance in the remote work context. This thesis focuses on workplace isolation and burnout as they are widely recognised as salient wellbeing issues for employees in the remote work context (Derks and Bakker 2014; Golden et al. 2008; Singh et al. 2022).

## **1.2 Summary of Chapter 2: The Development of the EPM Invasiveness Scale**

The first study is reported in Chapter 2, which discusses the measurement development and validation of a scale of EPM invasiveness. Prior literature suggests that invasiveness of EPM is a multidimensional construct with four sub-elements: EPM scope, EPM target, EPM constraints and EPM control (Ravid et al. 2020).

EPM scope refers to the number of forms of technological monitoring and the extent to which EPM data are individualised. EPM target is defined as the focus and kinds of information collected by EPM. EPM constraints represent the extent to which an organisation has explicit limits on the use of EPM and the handling of collected data. EPM control refers to the extent to which employees who are subject to electronic monitoring have influence over the design and use of EPM. Wider EPM scope and increased targeting of personal information in EPM indicate a more invasive use of EPM (Jeske and Santuzzi 2015; Ravid et al. 2023). In contrast, greater EPM constraints and control reflect an organisation's constraints and control on EPM use, limiting the invasive use of EPM (Alder and Ambrose 2005; McNall and Stanton 2011).

Building on Ravid et al.'s (2020) theoretical framework on EPM invasiveness, this study incorporates insights from relevant literature on EPM to develop a multifaceted measure assessing the invasiveness of EPM. To validate the newly developed measure of EPM invasiveness, this study conducted an online survey involving 355 employees. The collected survey data were used to validate the EPM invasiveness scale through both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). In alignment with theoretical expectations, the results indicate that four sub-elements of EPM invasiveness load onto two factors. Specifically, EPM scope and EPM target items load on the first factor which is theorised as to contribute to the invasiveness of EPM, indicating its invasive use. EPM constraints and EPM control items load on the second factor, theorised as to limit the invasiveness of EPM, representing the organisation's constraints and control regarding EPM use. The validated EPM invasiveness scale is subsequently employed in studies two and three.

### **1.3 Summary of Chapter 3: EPM Invasiveness and Workplace Isolation**

The second study discussed in Chapter 3 investigates the impact of the invasiveness of EPM on employee perceptions of isolation in the remote work context. Prior literature suggests that workplace isolation is a salient wellbeing concern for employees working remotely, as they are physically isolated from the workplace and colleagues and have a greater risk of receiving less organisational support (Bartel et al. 2012; Golden et al. 2008). As more invasive EPM involves the collection of extensive amounts of personal data (Ravid et al. 2020), the invasive use of EPM is likely to intensify the transfer of workplace and personal information from employees to organisations, reducing employees' sense of control over work and personal resources. This study predicts that the invasive use of EPM will result in employees experiencing a greater loss of control at work, leading to stronger perceptions of workplace isolation.

An online survey was conducted with 480 employees working for large organisations in the United States (US), all of whom had experience with remote work and their organisations' use of electronic monitoring. The results reveal a positive relationship between the invasive use of EPM (i.e. EPM scope and target) and employees' perceived workplace isolation, with the relationship being mediated by employees' diminished sense of control within their work environment. Furthermore, the study finds that in response to greater EPM invasiveness, organisations employ constraints and control on EPM use (i.e. EPM constraints and control). These constraints and controls over organisations' use of EPM are effective in improving employees' acceptance of EPM practices, which reduces the negative impact of EPM invasiveness on employees' sense of control and thus on their perceptions of workplace isolation.

#### **1.4 Summary of Chapter 4: EPM Invasiveness, Burnout and Performance**

Advanced technologies have been widely used in workplace, promoting MC driven by technologies such as electronic performance monitoring (EPM). However, EPM can affect employee job demands and resources, potentially amplifying work stress. Given that burnout, as a significant wellbeing concern for remote employees due to exposure to stressful work, poses challenges for both employees and organisations, his study investigates the effect of EPM invasiveness on employee burnout and performance in remote work settings. This study further explores the moderating role of an organisation's external corporate social responsibility (CSR) activities. Survey results indicate that EPM invasiveness indirectly influences employee performance through its impact on burnout. This indirect effect is more pronounced in organisations with lower external CSR activities compared to those with higher external CSR

engagement levels. The study adds to management control literature by providing insights into the mechanisms of burnout in the context of remote work and emerging technology. The findings of this study also highlight that external CSR activities can enhance employee identification, complementing EPM to mitigate its negative impact on employee wellbeing and performance.

The third study, discussed in Chapter 4, examines the effect of the invasiveness of EPM on employee burnout and performance in the remote work context. Prior research suggests that changes in management controls driven by technologies such as EPM can affect employee job demands and resources, potentially creating stress for individuals (Fonner and Roloff 2012; Martinez 2011). As burnout is a work-related wellbeing issue that results from prolonged exposure to stressful work situations (Bakker et al. 2014; Schaufeli and Greenglass 2001), it is likely that the invasive use of EPM amplifies employee burnout. Recent literature also highlights the growing prevalence of burnout for remote-working employees (Ninaus et al. 2021; Spagnoli et al. 2020), posing challenges for both employees and organisations and having negative performance outcomes (Bakker et al. 2014; Nahrgang et al. 2011).

As employees are aware of continuous monitoring by EPM, invasive EPM requires employees to invest more effort and attention to ensure that EPM accurately captures their dedication and performance, while at the same time, employees attempt to safeguard their personal information against being captured by EPM (Ravid et al. 2023; Tarafdar et al. 2007; Yost et al. 2019). As a result, employees can perceive an increase in the demands of the job. Meanwhile, the invasive use of EPM diminishes employees' job autonomy and restricts work interactions (Anteby and Chan 2018; Bernstein 2012), reducing job resources for employees. According to the job demands-resources model, burnout occurs because of excessive job demands and depleted job

resources (Demerouti et al. 2001). This study predicts that the invasiveness of EPM will escalate the imbalance between job demands and resources, which intensifies employee burnout and thus affects employee performance.

This study further examines the moderating role of the organisation's external corporate social responsibility (CSR) activities in the relationship between EPM invasiveness, employee burnout and performance. Previous literature suggests that external CSR activities enhance employee identification with the organisation through increased external prestige and overall attractiveness of the organisation, which contributes to employees' positive attitude and response to internal management initiatives (Ng et al. 2019; Schaefer et al. 2021). In the context of EPM, organisations' external CSR activities may help improve employees' acceptance of monitoring, mitigating the imbalance between job demands and resources associated with EPM. Therefore, this study expects that an organisation's external CSR activities moderate the impact of the invasiveness of EPM on employee burnout and performance.

This study used the survey discussed in Chapter 3 to collect data for analysis. The findings of the study indicate that the invasive use of EPM is positively associated with employee performance via the negatively mediating effect of employee burnout at work. The study also finds that the indirect effect of the invasive use of EPM on employee performance through employee burnout is stronger for organisations with a lower level of external CSR activities than for those with a higher level.

## **1.5 Contributions and Practical Implications**

With the increasing prevalence of new technologies in organisational internal management, it is imperative to understand their effects on employees. This thesis contributes to the literature and offers practical implications in the following ways.

### **1.5.1 Contributions to the Literature**

This thesis contributes to the literature in several ways. First, it contributes to the management control literature related to organisational employee performance monitoring and evaluation. Prior research in this area has primarily examined characteristics of ex post outcome-based performance measurement and monitoring, including subjective evaluations (e.g., Bol and Smith 2011; Hao 2021; Ittner et al. 2003), forward-looking metrics (e.g., Casas-Arce et al. 2017; Dikolli and Sedatole 2007; Farrell et al. 2008), and relative performance outcome information (e.g., Hannan et al. 2013; Wang 2017). The rapid adoption of EPM facilitates the transition of ex post performance measurement to ex ante performance management by expanding organisations' capabilities in capturing real-time employee inputs and work processes (Hughes 2021; Martinez 2011). However, the impact of this expansion in organisational monitoring on employees is not well understood. This thesis contributes to the literature by examining an important characteristic of EPM—its invasiveness—and showing its impact on employee perceptions of workplace isolation and burnout, subsequently employee performance outcome. This thesis highlights the potential negative wellbeing consequences of the expansion of organisational monitoring through new technology adoptions.

Second, this thesis contributes to the management control literature by extending knowledge on the role of performance monitoring in managing employees in the remote work environment. Remote work has increased significantly due to the COVID-19 pandemic (Fayard et al. 2021; Kniffin et al. 2021). A core change accompanying the transition from traditional office work to remote work is the integration of new technologies into performance monitoring practices (Hughes 2021; Trevor and Holweg 2022). However, understanding of the effects of these new remote

work performance monitoring practices on employees remains limited. Prior research calls for further investigations in this area (e.g., Nappert and Bamber 2023; Yang et al. 2022). This thesis suggests that although organisations adopt EPM as a solution to remotely monitoring employees, using overly invasive EPM results in employees negatively responding in the remote work context. This negative response leads to employees' feelings of loss of control and results in intensified workplace isolation and burnout, consequently impairing performance.

Third, this thesis adds to the EPM literature by developing a multidimensional scale of EPM invasiveness. Despite the growing significance and prevalence of EPM in practical settings, there is currently no comprehensive and validated measure of EPM characteristics. Ravid et al. (2020) propose a theoretical framework for EPM, identifying EPM invasiveness as a multifaceted construct with four dimensions: EPM scope, EPM target, EPM constraints and EPM control. They call for the development of multidimensional scales of EPM invasiveness. However, studies on EPM invasiveness primarily use unidimensional scales, independently measuring intensity (e.g., Laird et al. 2018; Wang et al. 2021) or employees' ability to control EPM (e.g., McNall and Stanton 2011). A recent meta-analysis by Ravid et al. (2023) utilises a coding-based measurement approach to explore the impact of EPM invasiveness on employees. However, due to data availability constraints, their measurement of EPM invasiveness was unable to capture all the dimensions acknowledged by Ravid et al. (2020). Therefore, this thesis extends prior literature by developing and validating a scale of EPM invasiveness and enriching the theoretical construct by analysing the relationships between its various dimensions. The validated scale is employed in two studies to address the overarching research questions in this thesis.

### 1.5.2 Implications for Management Practice

The findings in this thesis have the following practical implications. First, this thesis highlights both the complexities and advantages associated with the integration of new monitoring technologies in management control practice in remote work settings. The rapid acceleration of remote work adoption, triggered by global events, has prompted organisations to increasingly rely on new technologies to update performance monitoring practices. To optimise employee wellbeing and performance, organisations need to adopt a judicious approach to revamp management controls. This thesis suggests that this approach should be characterised by a careful balance that not only meets organisational imperative to monitor and enhance performance but also satisfies the fundamental needs of employees, including autonomy and relatedness.

Second, this thesis develops and validates a scale to assess the invasiveness of EPM. This scale can be a useful tool for organisational managers interested in assessing the level of EPM invasiveness and evaluating its impact on employee wellbeing. By proactively advocating for increased EPM constraints and controls, employees can influence organisational policies on monitoring to promote a more supportive work environment.

Third, the findings of this thesis have implications for regulators. Employee monitoring has significantly increased since the COVID-19 pandemic, highlighting the urgent need for regulatory measures to constrain the invasive use of monitoring and safeguard the fundamental rights to privacy for individual employees.<sup>1</sup> The absence of

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<sup>1</sup> Both the United States (US) and Australia allow organisations to monitor employee behaviour and performance during working hours while adhering to established legal principles and guidelines (e.g. Office of the Australian Information Commissioner 2022; Electronic Communications Privacy Act 2012). In Australia, the *Privacy Act 1988 (Cth)* guides the privacy and security framework for workplace surveillance. In the US, there is no comprehensive federal law but there are state laws regulating the extent to which employers can monitor employees in the workplace (Ajunwa et al. 2017; Zickuhr 2021).

a comprehensive understanding of invasive monitoring and the lack of regulatory restrictions have allowed invasive monitoring practices to expand without adequate oversight (Ajunwa et al. 2017; Zickuhr 2021). The comprehensive scale for the invasiveness of EPM developed in this thesis could serve as a valuable tool for regulators to better identify and assess the level of invasiveness associated with monitoring practices. This thesis also provides regulators with insights to formulate more effective and comprehensive regulations that balance the needs of organisations with the protection of individual rights and wellbeing.

## **1.6 Structure of the Thesis**

The thesis is organised as follows. Chapter 2 reviews the theoretical framework of EPM invasiveness and outlines the development and validation process for the EPM invasiveness scale. Chapter 3 discusses a study examining whether the invasiveness of EPM affects employees' perceived workplace isolation in the remote work context. Chapter 4 discusses a study investigating whether the invasiveness of EPM affects employee burnout and performance in the remote work context. Chapter 5 concludes the thesis.

## Chapter 2: Development of Measures of EPM Invasiveness

### 2.1 Introduction

Employee monitoring has a long history. In the early days, it relied on in-person supervisors, with surveillance subject to both economic and technological limitations. In contemporary organisations, technological advances have greatly streamlined employee monitoring, making it more cost-effective and contributing to the widespread adoption of EPM (Alge and Hansen 2013; Ninaus et al. 2021).<sup>2</sup>

EPM has become an important component of management controls for organisations worldwide and involves a variety of monitoring techniques. According to a survey by the American Management Association (2007), at least 66% of US companies monitor their employees' internet usage, 45% log keystrokes and 43% track employee emails. In a more recent survey conducted by VMware (2021)<sup>3</sup> involving 7,600 global business managers, 70% of respondents indicated they had either installed or planned to install monitoring systems on remote employee devices, including employer-provided cell phones and laptops. The ubiquitous information technology used at work, coupled with tracking practices such as browser history retention, phone apps, wearable fitness trackers and facial recognition systems empower organisations to monitor employees more extensively and intensively than ever before (Ajunwa et al. 2017; Holland et al. 2015). These techniques enhance organisations' real-time monitoring capabilities, collecting more detailed information from employees (Raveendhran and Fast 2021).

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<sup>2</sup> EPM refers to a performance monitoring system that uses real-time monitoring techniques to observe, record and analyse information directly or indirectly related to job performance (Stanton 2000).

<sup>3</sup> VMware is a global cloud computing and virtualisation technology company that develops virtualisation software. VMware conducted a survey during July and August 2021, collecting global data from 7,600 respondents, including information technology decision-makers, human resources decision-makers, and business decision-makers, about their organisation's use of electronic monitoring.

Prior literature indicates that the use of EPM benefits organisations. First, EPM provides data-driven insights into employee productivity and work processes. EPM captures how employees allocate time and effort to performing tasks, enabling organisations to rectify inefficiencies and streamline workflows (Laird et al. 2018; Levchenko et al. 2011). Second, EPM facilitates more objective performance assessment, allowing organisations to recognise employee dedication, identify top performers and pinpoint areas requiring additional training or skill development (Holland et al. 2015). This is particularly valuable for employee monitoring in the context of remote work, overcoming the constraints of physical distance and time (Golden and Chemi 2020). Furthermore, the increased efficiency and reduced need for in-person supervision contribute to substantial cost reductions, positively impacting on an organisation's financial performance (Alge and Hansen 2013). Considering these advantages, organisations are increasingly relying on EPM to monitor employees to meet their needs for performance management.

The capability of EPM to allow organisations to collect extensive information from employees raises concerns about the unprecedented and invasive nature of employee monitoring (Hughes 2021). Theoretical and empirical research in this area lags in analysing the effects of EPM on employees. Findings from research on the effects of EPM vary greatly from study to study, often treating EPM as a unitary concept (i.e., present or absent) or focusing on one specific monitoring practice (e.g., Adams and Mastracci 2019; Ranganathan and Benson 2020). However, in practice, EPM often involves a variety of monitoring techniques working as a system. For example, previous literature indicates that EPM uses a combination of monitoring techniques, such as email monitoring, GPS tracking, and internet usage tracking (Jeske and Santuzzi 2015; Wang et al. 2020). Each of these monitoring techniques serves to

capture distinct aspects of employee information, such as communication patterns, movement and location, and online working activities, which collectively provides a comprehensive overview of their work behaviour. This makes EPM a multidimensional phenomenon that affects employees based on the characteristics of its use. Overlooking the multifaceted nature of EPM makes it challenging to derive inferences about the findings of prior EPM studies regarding its impact on employees and the generalizability of these findings. This emphasises the need for examining EPM characteristics and developing multifaceted measures of EPM. Therefore, this study focuses on an important characteristic of EPM—its invasiveness—that has received limited research attention in the EPM literature. The invasiveness of EPM is defined as the intrusion of EPM that affects employees’ control over their personal or work-related information and activities (Ravid et al. 2020).

In the absence of a previously established and validated measure for EPM invasiveness, this study follows Churchill (1979)’s measurement development framework to develop and validate a measure of EPM invasiveness. This framework involves six steps. First, this study specifies the domain of EPM invasiveness based on the theoretical framework proposed by Ravid et al. (2020). By conducting a comprehensive review and synthesising existing literature on EPM, their framework suggests that the invasiveness of EPM is a multidimensional construct comprised of four sub-elements: EPM scope, EPM target, EPM constraints, and EPM control.<sup>4</sup> Second, building on Ravid et al. (2020)’s theoretical framework, this study integrates

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<sup>4</sup> According to Ravid et al. (2020), EPM scope refers to the number of forms of technological monitoring and the extent to which EPM data are individualised. EPM target is defined as the focus and kinds of information collected by EPM. EPM constraints represent the extent to which an organisation has explicit limits on the use of EPM and the handling of collected data. EPM control refers to the extent to which monitored employees have influence over the design and implementation of the monitoring process.

theoretical foundations from the relevant literature and empirical insights to develop a comprehensive list of items for assessing EPM invasiveness.

Third, the measurement purification process involved a pilot survey conducted with 50 pre-screened employees<sup>5</sup>. The pilot survey data was used for factor analysis to assess dimensionality and for reliability and refine the measures. Fourth, a validation survey involving 355 participants<sup>6</sup> was conducted for factor analysis to assess item redundancy, dimensionality and reliability. This study evaluates measurement dimensionality and reliability using EFA and CFA and assesses the internal consistency utilising Cronbach's alpha. Fifth, this study performs CFA to assess construct validity by looking into the average variance extracted (AVE), factor loadings, Fornell and Larcker criterion testing (Fornell and Larcker 1981). Content validity was evaluated through expert reviews and seminar discussion by senior researchers with expertise in management control and information systems. Last, this study develops norms to facilitate the interpretation of scores on the scale measuring employee perceptions of EPM invasiveness. With over 400 valid responses obtained from employees who experienced being monitored by EPM, the sample size in this study was reasonably representative of the population, capturing employees' perceptions of EPM invasiveness at work (Urbina 2004). Additionally, this study identifies that the norms about EPM invasiveness should be periodically updated to reflect changes in managerial strategies in EPM implementation.

Consistent with theoretical expectations, the results indicate that the four sub-elements of EPM invasiveness loaded onto two factors. Specifically, EPM scope and

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<sup>5</sup> Participants were required to work for large US organisations, have experience with remote work, and have experience being electronically monitored. Before the pilot survey, a review of the measurement items by several senior researchers in management control and information systems. Feedback from academic expert reviews led to modifications that enhanced the clarity and relevance of the items.

<sup>6</sup> The validation survey applied the same selection criteria as the pilot survey to screen participants.

EPM target load on the first factor, which is theorised as EPM ST (refers to as the invasive use of EPM in this thesis), contributing positively to EPM invasiveness. EPM constraints and EPM control load on the second factor, EPM CC, which is theorized as an organisation's constraints and control on EPM use. EPM CC limits the invasiveness of EPM. In addition, this study evaluates the measurement properties of the developed scale by conducting nomological validation, linking the EPM ST and EPM CC to constructs associated with EPM invasiveness identified in prior research.<sup>7</sup>

This study contributes to the literature on technology-based monitoring by developing and validating a multifaceted scale to assess the invasiveness of EPM (Ravid et al. 2023, 2020). This study enriches the theoretical construct by analysing the relationship between different dimensions of the invasiveness of EPM. The findings of this study have implications for organisational managers, employees regarding employee monitoring. The significant increase in employee monitoring since the COVID-19 pandemic has created a need for regulatory measures to constrain the invasive use of monitoring and safeguard individuals' fundamental privacy rights. The lack of a comprehensive understanding of invasive monitoring and the absence of regulatory restrictions allows invasive monitoring practices to grow without adequate oversight (Ajunwa et al. 2017; Zickuhr 2021). A scale measuring the invasiveness of EPM could serve as a valuable tool for organisational managers and government regulators to better identify and assess the level of invasiveness associated with organisational monitoring practices.

The remainder of this chapter is organised as follows: Section 2.2 reviews the literature on organisations' performance monitoring. Section 2.3 reviews the literature

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<sup>7</sup> In the nomological validation analyses, this study examines the relationship between EPM ST and EPM CC and constructs, including employee perceived invasion of privacy, job autonomy, and monitoring fairness (refer to Section 2.6.2.4 in Chapter 2).

on organisations' use of EPM. Section 2.4 discusses the conceptualisation (domain) of EPM invasiveness. Section 2.5 describes the measurement items development for EPM invasiveness. Section 2.6 reports the measurement validation process and results.<sup>8</sup> Section 2.7 summarises the chapter and outlines the limitations of this study.

## **2.2 Literature Review on Organisations' Performance Monitoring**

Technological advancements have driven the development of more cost-effective, efficient, and easily implementable performance monitoring systems (Holt et al. 2016). Recent management control literature (Nappert and Bamber 2023) suggests that technologies such as the use of algorithms have equipped organisations with enhanced capabilities for real-time employee performance monitoring, comprehensive data collection, and in-depth analysis. This increase in capability, advanced by new technology, has facilitated a shift from traditional *ex post* to *ex ante* management controls, which are now widely utilised to improve employee performance management in organisations (Kellogg et al. 2020). Despite the growing adoption of *ex ante* performance monitoring practices, prior research in management control primarily focuses on traditional mechanisms, such as *ex post* outcome-based performance evaluations. These studies predominantly focus on executives' incentives and organisational value from an economic perspective, incorporating a range of evaluation methods—financial, non-financial, subjective, forward-looking, and relative performance metrics—into the performance evaluations of firm executives (e.g., Hao

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<sup>8</sup> Section 2.6.1 outlines the measurement purification process. In Section 2.6.2, the study discusses measurement validation involving reliability and validity assessment. Section 2.6.2.1 details the item specification, refining individual scale items to capture the dimensions of EPM invasiveness. Section 2.6.2.2 presents reliability and validity testing for EPM invasiveness sub-elements, ensuring measurement of specific EPM invasiveness aspects. Section 2.6.2.3 assesses the reliability and validity of the two main sub-constructs of EPM invasiveness. Section 2.6.2.4 discusses nomological validation, examining the relationship of the scales to theoretical constructs indicated in prior literature to confirm their theoretical soundness. Section 2.6.2.5 discusses the development of the norm for EPM invasiveness. Finally, Section 2.6.3 discusses common method bias assessment.

2021; Ittner et al. 2003; Gan et al. 2020). They emphasise the need for performance monitoring and evaluation systems to be strategically designed to align executives' incentives with shareholder interests (Tahir et al. 2019).

From an employee perspective, ex post performance monitoring and evaluations often fall short in capturing the detailed dimensions of performance, especially in tasks requiring qualitative contributions, such as those in knowledge-intensive fields (e.g., Anderson et al. 2020). Micheli and Mari (2014) highlight the importance of adopting a pragmatic view of employee performance monitoring and evaluation that considers detailed performance information. To deepen the understanding of performance, organisations are increasingly leveraging feedback from managers, peers (Khajehnejad and Linder 2022), and customers (Eyring 2020). The objective and detailed performance data are further captured by technological advancements, such as high-definition cameras and real-time tracking systems. These technologies not only assess performance but also collect comprehensive data on employee behaviours, work input, and skill data, and are widely used in organisations. For example, nurses are tracked via GPS when providing services (Carr 2014), manufacturing employees wear radiofrequency identification technologies to monitor productivity (Ranganathan and Benson, 2020), and police-civilian interactions are recorded using body cameras (Adams and Mastracci 2019).

As organisations continuously extend the boundaries of performance evaluation and monitoring (Laguecir and Leca 2019), the use of technology-based ex ante performance monitoring practices can significantly affect employees' attitudes and behaviours at work, as well as employee-employer relationships. Experimental research by Schedlinsky et al. (2020) indicates that the motivational effects of relative performance information diminishes when participants are subject to video monitoring,

as it is perceived as a control mechanism that can create mistrust and undermine workplace autonomy. In the realm of sports business, Baerg (2017) suggests that athletes respond to intensive Big Data monitoring in two distinct but not mutually exclusive ways: by expressing privacy concerns and/or by embracing the concept of the quantified self. The broad data collection of new technologies, along with their algorithmic data analysis, may inevitably impact employee wellbeing and performance (Manoochehri and Pinkerton 2003; Patil and Bernstein 2022). This highlights the need for further investigation into how ex ante technology-driven performance monitoring affects employee well-being and performance.

### **2.3 Literature Review on Organisations' Use of EPM**

EPM is a typical performance monitoring system advanced by new technology that facilitates organisations to manage employee performance, particularly in environments where employees work remotely. The necessity for remote collaboration and management during the COVID-19 pandemic further accelerated the adoption of EPM to manage the performance of employees working from various locations and sectors (Satariano 2020). Prior literature indicates that extensive EPM practices have been used at work, aiming to ensure a desired level of employee performance.

Complementing traditional monitoring methods, which typically involve intermittent direct supervision and focus on performance outcomes (Ajunwa et al. 2017; Alder et al. 2007), EPM uses a variety of monitoring techniques, particularly real-time monitoring techniques. These include video monitoring, electronic medication administration records, call monitoring (e.g., Levchenko et al. 2011), GPS tracking, wearable electronic safety monitors (e.g. Zickuhr 2021), electronic time clock systems, and internet usage and email monitoring (e.g., Ninaus et al. 2021). Morris et al. (2017) indicate that technologies such as body heat sensor desk hardware have been used by

banking institutions (i.e. Barclays Bank) to track how often their employees are at their workstations. By implementing these techniques, organisations enhance real-time monitoring capabilities, facilitating the detailed tracking of extensive data related to various dimensions of employee performance and behaviours. Raveendhran and Fast (2021) indicate that EPM not only captures data on employee performance outcomes but also their inputs, work processes, casual interactions, and even private behaviour. Stanton (2000) highlights that this data collection may extend beyond the need for performance assessment, even occurring without explicit consent obtained from employees. The continuous tracking employee behaviours and gathering of data through EPM enables organisations to monitor employees with varying levels of discretion and intrusiveness, emphasizing the potential invasiveness of EPM and its impact on employee wellbeing and performance.

While organisations have been using technology to monitor employee performance for decades (e.g., Irving et al. 1986), the impact of EPM on employees remains largely unclear. Early EPM research often treated EPM as a singular phenomenon, investigating its overall presence and related impacts on employee behaviour and attitudes, resulting in mixed findings. One strand of literature suggests that EPM is linked to positive work attitudes and enhanced employee performance, attributing these positive effects to EPM's role in providing more objective performance appraisals (e.g., Bhave 2014), reducing procrastination and work pressure and promoting productivity (e.g., Wells et al. 2007). Other research has shown that EPM increases work stress (e.g., Aiello and Kolb 1995), invades employee privacy (e.g., Alge and Hansen 2013), diminishes trust at work (e.g., Holland et al. 2015), imposes restrictions on work interactions (e.g., Amick and Smith 1992), and decreases job satisfaction and performance (e.g., Stanton and Julian 2002). For example, Aiello and

Kolb (1995) suggest that EPM reduces essential interactions between supervisors and employees necessary for ensuring adherence to work norms but emphasises the potential deviations from the work norm in employee behaviours. This introduces a punitive aspect to supervisor-employee interactions, leading to increased stress among employees. Since monitoring is often perceived as being accompanied by the establishment of work standards to assess employee performance, Amick and Smith (1992) indicate that EPM increases employees' concerns about the restrictions of work interaction, decreasing their willingness to engage in social interaction at work.

Mixed findings in early EPM research are not surprising, given that EPM is a multidimensional phenomenon involving diverse monitoring practices that capture different aspects of employee behaviours. Prior studies examining the effects of the overall presence of EPM on employees may differ in the monitoring characteristics they capture in the measurement, posing a challenge to assessing the implications and generalizability of their findings (Ravid et al. 2023). In the last 20 years, research on EPM has shifted from examining the presence of EPM to conducting more precise explorations of EPM characteristics, including its clarity (e.g., Holman et al. 2002), purpose (e.g., Becker and Marique 2014), target (e.g., Ambrose and Alder 2000), scope (e.g., Moorman and Wells 2003), feedback delivery (e.g., Holman et al. 2002), control (e.g., McNall and Stanton 2011), timing (e.g., Watson et al. 2013), intensity (e.g., Alge et al. 2004) and transparency (e.g., McNall and Roch 2009). However, characteristics explored in prior literature share conceptual similarities from a psychological perspective. For example, both the scope and target of EPM collectively decide the extent and type of collected information and define the detail and precision of EPM. The broader scope and diverse types of information collected can result in more intrusive monitoring perceived by employees, impacting their psychological wellbeing.

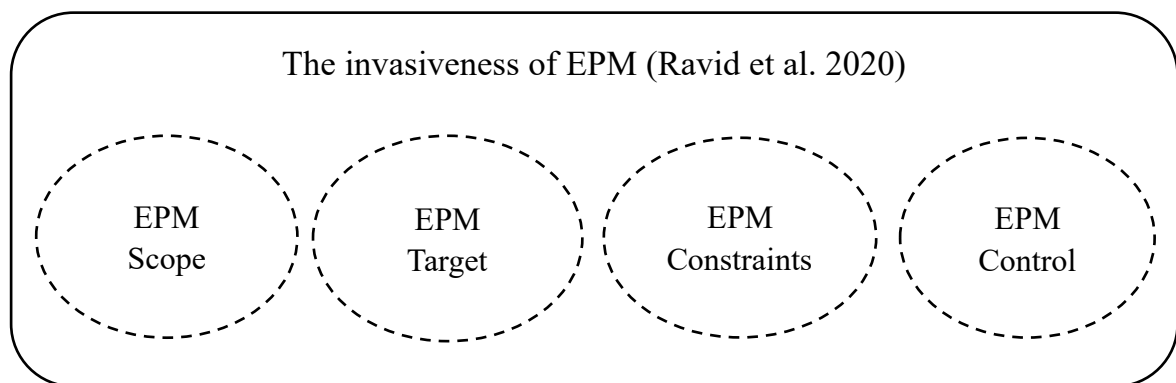
This underscores the importance of using common language to categorise EPM characteristics based on its psychological differences and examine its effects on employee well-being and performance (Ravid et al. 2020).

Based on a comprehensive review and integration of the EPM literature, Ravid et al. (2020) suggest that EPM is a multidimensional phenomenon affecting employee attitudes and behaviours. Their study categorises EPM characteristics identified in prior literature according to the psychological conceptual similarity, presenting a theory-based typology of EPM characteristics. However, Ravid et al. (2020) do not empirically evaluate the proposed framework or offer estimates of the effects of EPM on employees. They call for the development of multidimensional measures of EPM characteristics and emphasise the need for empirical research to clarify the mixed findings in the EPM literature. Therefore, this study responds to the call by developing and validating a multifaceted scale for a critical EPM characteristic: the invasiveness of EPM. This characteristic distinguishes EPM from traditional monitoring and significantly influences individuals' responses to EPM but has received little research attention.

#### **2.4 Conceptualisation (domain) of EPM Invasiveness**

According to Ravid et al. (2020), the invasiveness of EPM is a multidimensional construct defined as the intrusion of EPM and how it affects employees' control over personal or work-related information and activities. EPM invasiveness consists of four sub-elements: EPM scope, EPM target, EPM constraints and EPM control. Figure 2.1 depicts the conceptual framework of EPM invasiveness proposed by Ravid et al. (2020).

**Figure 2.1: Conceptual framework of the invasiveness of EPM from prior research**



### **2.4.1 EPM Scope**

EPM scope refers to the number of forms of technological monitoring and the degree to which EPM data are individualised (Ravid et al. 2020). Compared with the extent of EPM monitoring, which assesses the overall depth and intensity of the monitoring practices used within an organisation (Ravid et al. 2020), EPM scope focuses on the breadth and specificity of monitoring practices. This dimension specifically emphasises the variety of monitoring techniques used and the range of behaviours and activities that are monitored. Jeske and Santuzzi (2015) indicates that employees tend to perceive monitoring systems as more invasive when organisations employ a greater number of monitoring practices. A broader scope of monitoring practices enables organisations to collect more detailed information about employee performance and behaviours, facilitating personalised and individualised analyses to predict employee thoughts, feelings, and even health conditions. As organisations accumulate comprehensive and varied data through these diverse monitoring practices, employees perceive increased scrutiny in both their work and personal lives (Gagné and Bhawe 2011; Zweig and Webster 2002). This potentially intrudes on employees' privacy and affects their attitudes towards work. For instance, Wang et al. (2021) assessed the scope of monitoring by surveying remote employees about various

monitoring practices in their workplace, such as clocking in/out via apps, daily reporting and maintaining cameras on during working hours. Their findings indicate that employment of a greater variety of monitoring practices led to an increased perception of work–home interference among remote workers.

#### **2.4.2 EPM Target**

EPM target refers to the focus and kinds of information collected by EPM and can be categorised based on the level of intimacy or personal nature of the monitoring. Ravid et al. (2020) categorise targets of EPM into three types: (1) thoughts, feelings and physiology, which involves monitoring individual attitudes and biodata (e.g., social media feeds and emails, biometric monitoring); (2) body or location, capturing the movement and location of employees or the organisation’s property (e.g., GPS tracking); (3) tasks or task behaviour, which involves monitoring the amount of work completed and the quality of the work (e.g., keystroke tracking and working file monitoring).

Individuals’ acceptance of monitoring varies according to the type of information being monitored. Ravid et al. (2020) indicate that the most invasive type of monitoring is the tracking of an individual’s thoughts, feelings or physiology, followed by targeting their body or physical location and focusing on task behaviours. This is because monitoring task behaviours more distinctly demonstrates a link between monitoring and work performance, whereas monitoring employees’ personal information does not establish such a direct relationship (Alder et al. 2007). Instead, tracking personal data reduces employees’ control over their private information, significantly impacting their attitudes towards and acceptance of monitoring (Morris et al. 2017; Zweig and Webster 2002). Therefore, targeting a greater number of

information categories, especially personal information, results in a higher level of EPM invasiveness.

### **2.4.3 EPM Constraints**

EPM constraints represent the extent to which an organisation has explicit limits on EPM use (e.g., when and how EPM can occur) and the handling of collected data (e.g., how data will be used, and who will have access to them; Ravid et al. 2020). When organisations impose explicit constraints on the use of EPM, employees typically perceive EPM as less invasive (Zweig and Webster 2002). For instance, computer monitoring designed exclusively for information security purposes, with stored data accessible only to an information security team in suspected cases, is considered to have high constraints. Conversely, computer monitoring broadly collects employee personal information and uses the data for various purposes is characterised as having low constraints.

Prior research indicates a positive relationship between constraints on EPM and employees' positive work attitudes, including perceptions of justice, task satisfaction, and reduced concerns regarding privacy invasion. In experiments conducted by Alge (2001), individuals perceived EPM as less intrusive when more constraints were placed on how the collected data could be used, both for personal and work-related information. Zweig and Webster (2002), in their experiments, found that organisations' justifications or explanations for how monitoring would occur serve as evidence that the organisation had a legitimate reason for implementing the system, increasing employees' perception of monitoring fairness. Therefore, constraints on monitoring provide employees with guidelines for the operation of monitoring, thereby enhancing their confidence that the collected data will not be used for unjustified reasons.

#### **2.4.4 EPM Control**

EPM control refers to the extent to which employees who are subject to electronic monitoring have influence over the design and use of the monitoring process (Ravid et al. 2020). For instance, an individual who is asked to record themselves performing a task for future reference may have a high level of control, being able to stop, start, pause, delay and even edit the monitoring process. In contrast, call centre employees, lacking the ability to determine when or how their performance is monitored, have limited control over monitoring.

Previous studies suggest that individuals who have the ability to influence the design and use of monitoring systems tend to be less concerned about privacy invasion and often perform better than those lacking control over the monitoring. For instance, in experiments conducted by McNall and Stanton (2011), employees given the ability to turn off monitoring during non-working hours or situations requiring privacy perceived EPM as fairer and showed enhanced work motivation. Similarly, a study by Douthitt and Aiello (2001) found that individuals who could deactivate electronic monitoring exhibited significantly better performance than those without this capability. These findings align with research on employee participation and voice (e.g., Lind and Tyler 1988; Milliken et al. 2015), suggesting that when employees have greater control over the work process, they are more engaged and demonstrate enhanced performance. This is because greater job control enhances perceptions of fairness and alignment between organisations and employees.

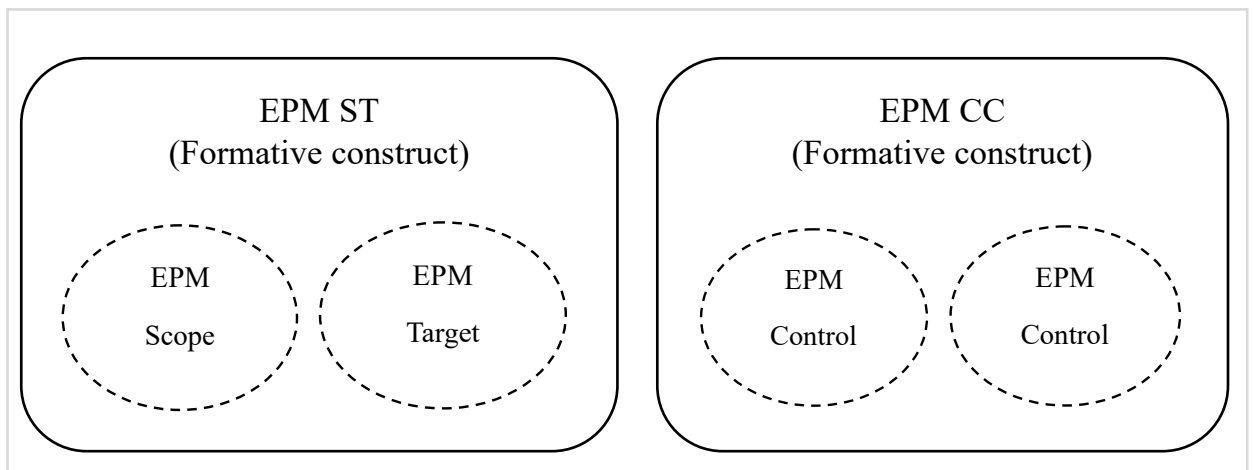
#### **2.4.5 Sub-constructs of EPM Invasiveness: EPM ST and EPM CC**

The above discussion indicates that a broad scope of monitoring techniques targeting various types of information—particularly personal information—signifies a more invasive use of EPM. Prior research suggests that constraints on EPM serve to clarify its purpose and establish clear boundaries between work and personal life (Alge 2001; Zweig and Webster 2002). EPM control provides employees with a mechanism to influence the design and use of EPM, reducing their concerns regarding privacy invasion and enhancing their perceptions that their data will not be used for unacceptable reasons (Douthitt and Aiello 2001; McNall and Stanton 2011). This discussion suggests that EPM constraints and control can be used to address employees' concerns over the high EPM scope and target. When organisations implement various monitoring techniques and collect more personal data, they are likely to establish constraints and provide control over EPM to mitigate its perceived invasiveness among employees. Thus, the scope and target of EPM, and the constraints and control of EPM, work in opposite ways to contribute to EPM invasiveness.

Therefore, based on prior research, this study extends the EPM framework developed by Ravid et al. (2020) by considering the theoretical relationship between the scope and target of EPM and the constraints and control placed on EPM use. This study proposes grouping the four elements of EPM invasiveness into two sub-constructs: EPM ST (the scope and target of EPM) and EPM CC (the constraints and control placed on EPM). EPM ST is conceptualised as a construct composed of two sub-elements: EPM scope, which involves the number of monitoring techniques to observe employees, and EPM target, which captures types of information. These sub-elements jointly contribute to the increased invasiveness of EPM. Similarly, EPM CC consists of two sub-elements: EPM constraints, which represent the organisation's

standpoint on the limitations of EPM use, and EPM control, which reflects the employee viewpoint on their control over EPM use. Together, these perspectives work collectively to reduce the invasiveness of EPM. According to the decision rules indicated by Bedford and Speklé (2018) for distinguishing formative and reflective constructs, EPM ST and EPM CC are conceptualised as formative constructs, as their sub-elements capture different aspects of the construct. Figure 2.2 illustrates the conceptual framework of EPM invasiveness used in this study.

**Figure 2.2: The two sub-constructs of EPM invasiveness**



## **2.5 Development of Measurement Items of EPM Invasiveness**

Ravid et al. (2020) advocate for the development of multidimensional scales of EPM characteristics, such as EPM invasiveness. Given the absence of an established and validated measure of EPM invasiveness, this study extends prior EPM literature to develop and validate a multidimensional scale assessing EPM invasiveness. This study draws on Ravid et al.'s (2020) theoretical framework and incorporates theoretical foundations from the relevant literature and empirical insights to develop a comprehensive list of items for assessing EPM invasiveness. Table 2.1 presents the initial items constituting the scale for the invasiveness of EPM.

**Table 2.1: Initial items in the scale of the invasiveness of EPM**

Items	Scale	Construct	Type
<i>Does your organisation:</i>			
SCOPE1	Monitor employees' email content		
SCOPE2	Monitor employees' working files		
SCOPE3	Track employees' social media feed		
SCOPE4	Hold regular online meetings during the working time		
SCOPE5	Monitor employees' computer usage (e.g., content and time)		
SCOPE6	Require employees to provide daily report on their working activities		
SCOPE7	Track employees' time at work with a time recording system		
SCOPE8	Track employees' keystrokes and time spent at the keyboard		
SCOPE9	Record employees' attendance at meetings or other organisational activities		
SCOPE10	Require employees to share screen during the working time		
SCOPE11	Monitor employees' activities by using facial recognition tools	EPM scope	Formative
SCOPE12	Require employees to keep cameras turned on during the working time		
SCOPE13	Monitor employees' telephone use (e.g., phone tapping, time spent on call and numbers called)		
SCOPE14	Track employees' physical position or geospatial movement (e.g., GPS tracking)		
SCOPE15	Track employees' internet usage or activities (e.g., monitoring website browsing history and internet connection history)		
SCOPE16	Incentivise wellness programs at work using FitBit or similar technology to monitor employees' physical activity		
SCOPE17	Incentivise electronic medication sensors (e.g., heart rate checking tool) to monitor employees' physical activity and health		

<i>EPM practices used by your organisation capture information about:</i>				
TAGT1	Employees' thoughts, feelings and physiology (e.g., biometric information, social media feed, personal email content)	Seven Likert scale ranges from 1 (strongly disagree) to 7 (strongly agree) with a midpoint (neither agree nor disagree)	EPM target	Formative
TAGT2	Employees' body or location (e.g., video monitoring, GPS tracking)			
TAGT3	Employee tasks or task behaviour (e.g., keystroke tracking, working file monitoring)			
<i>To what extent the organisation has explicit policies on:</i>				
COST1	When EPM practices could occur	Seven Likert scale ranges from 1 (very little) to 7 (very much) with a midpoint (neutral)		
COST2	How EPM practices could occur			
COST3	How the collected monitoring data would be used			
COST4	Who could access the collected monitoring data		EPM constraint	Formative
<i>How adequate is the organisation's explanation of the procedures for deciding?</i>				
COST5	When EPM practices could occur	Seven Likert scale ranges from 1 (not at all adequate) to 7 (extremely adequate) with midpoint (moderate level of adequate)		
COST6	How EPM practices could occur			
COST7	How the collected monitoring data would be used			
COST8	Who could access the collected monitoring data			
COTL1	Employees have input into the design of EPM practices.	Seven Likert scale ranges from 1 (strongly disagree) to 7 (strongly agree) with a midpoint (neither agree nor disagree)		
COTL2	To what extent employees have an opportunity to influence the use of electronic performance monitoring.	Seven Likert scale ranges from 1 (no opportunity) to 7 (full opportunity) with a midpoint (moderate level of opportunity)	EPM control	Formative
COTL3	Whether employees have options to turn off monitoring devices or quit monitoring software/applications during work hours or times when privacy is needed.	Yes/No		
COTL4	Whether employees have options to turn off monitoring devices or quit monitoring software/applications during non-work hours or times when privacy is needed	Yes/No		

### **2.5.1 EPM Scope**

EPM scope refers to the number of forms of technological monitoring and the extent to which EPM data are individualised. As Ravid et al. (2020)'s theoretical framework does not provide a specific list of commonly employed monitoring techniques, this study follows Wang et al.'s (2021) method to create a checklist of EPM techniques to capture EPM scope. To create the checklist, this study starts with Wang et al.'s (2021) measure, which includes only three monitoring techniques: daily report tracking, time at work (e.g., clocking in/out monitoring) and real-time camera monitoring. According to Alge and Hansen (2013), organisations also monitor employees by monitoring their internet, telephone, computer and social media usage. Abril and Harwell (2021) indicate that monitoring also extends to attendance at meetings or work activities and the detection of an individual's physical location via GPS. An American Management Association survey in 2007 shows that organisations use other monitoring techniques such as email content monitoring, working file monitoring, regular online meetings, video surveillance, keystroke logging and real-time computer screen monitoring. Recent literature reveals an increasing reliance on information technology for more detailed information tracking, including facial recognition tools, electronic medication sensors and wearable fitness trackers as part of wellness programs (e.g., Charbonneau and Doberstein 2020; Martin et al. 2016).

Building on the aforementioned research, this study follows Wang et al.'s (2021) method using a checklist of monitoring techniques measuring EPM scope and expand the checklist to 17 items, which are commonly employed monitoring techniques indicated in prior monitoring literature. The EPM techniques include monitoring of (1) email content, (2) working files, (3) social media feeds, (4) regular online meetings, (5) computer usage, (6) daily reports, (7) time at work, (8) keystrokes, (9) attendance at

meetings or work activities, (10) real-time computer screens, (11) telephone use and (12) internet usage; and monitoring through the use of (13) facial recognition tools, (14) real-time cameras, (15) physical position tracking technology, (16) wellness programs and (17) electronic medication sensors. These items are denoted as SCOPE1 to SCOPE17 in Table 2.1. Participants are asked to indicate 'yes' or 'no' for each item to specify whether their organisation employed the corresponding EPM practice. Following the approach of Wang et al. (2021), a large number of monitoring techniques used by organisations indicate an extensive EPM scope.

### **2.5.2 EPM Target**

EPM target refers to the focus and kinds of information collected by EPM. Based on the level of intimacy or personal nature of the monitoring, Ravid et al. (2020) categorise EPM targets into three types: (1) thoughts, feelings and physiology; (2) body or location; and (3) tasks or task behaviour. This study adopts Ravid et al.'s (2020) categorisation of EPM target and develops three items to capture the three distinct types of monitoring target, denoted as TAGT1, TAGT2 and TAGT3. Participants are asked to indicate agreement on the following statements: 'The electronic performance monitoring practices used by your organisation capture information about (1) employees' thoughts, feelings and physiology (e.g., biometric information, social media feed, personal e-mail content); (2) capture employees' body or location (e.g., video monitoring, GPS tracking); and (3) capture employee tasks or task behaviour (e.g., keystroke tracking, working file monitoring)'. Each item is measured using a 7-point Likert-type scale ranging from 1, 'strongly disagree' to 7, 'strongly agree'.

### 2.5.3 EPM Constraints

EPM constraints represent the extent to which an organisation has explicit limits on the use of EPM (e.g., when and how EPM can occur) and the handling of collected data (e.g., how data will be used, and who will have access to them; Ravid et al. 2020). Given the absence of established measurement items for EPM constraints, this study develops two alternative sets of items to assess this construct.

The first set of items is developed based on the definition of EPM constraints by Ravid et al. (2020). The first four items (denoted as COST1, COST2, COST3 and COST4) measure the extent of the organisation's explicit policies on (1) when EPM practices could occur, (2) how EPM practices could occur, (3) how the collected monitoring data would be used and (4) who could access the collected monitoring data. These four items are measured using a 7-point Likert-type scale ranging from 1, 'very little' to 7, 'very much'.

This study develops a second (alternative) set of items derived by adapting an item from Zweig and Webster (2002) that measures an organisation's justification for using a monitoring system—a concept closely related to EPM constraints. To tailor it to the current context, the wording of the item is modified and expanded to create four items that align with the four dimensions of EPM constraints, referred to as COST5, COST6, COST7 and COST8. These items assess the adequacy of the organisation's explanation of procedures for deciding (5) when EPM practices could occur, (6) how EPM practices could occur, (7) how the collected monitoring data would be used and (8) who could access the collected monitoring data. Each item is measured using a 7-point Likert-type scale ranging from 1, 'not at all adequate' to 7, 'extremely adequate'.

#### **2.5.4 EPM Control**

EPM control refers to the extent to which employees who are subject to electronic monitoring have influence over the design and use of the monitoring systems (Ravid et al. 2020). This study uses two alternative sets of items adapted from prior EPM literature to measure EPM control.

The first set of items, denoted as COLT1 and COLT2, is adapted from Zweig and Webster (2002), originally designed to assess the extent of employee input into the design and use of monitoring systems (i.e., awareness systems). Aligned with Ravid et al.'s (2020) discussion on EPM control, these two items measure employees' influence on the design and use of monitoring systems. To ensure their relevance to the context of EPM, this study modifies the wording of these items accordingly. In COLT1, participants are asked to indicate their agreement with the statement 'Employees have input into the design of electronic performance monitoring practices' using a 7-point Likert-type scale ranging from 1, 'strongly disagree' to 7, 'strongly agree'. In COLT2, participants are asked to rate 'To what extent employees have an opportunity to influence the use of electronic performance monitoring' using a 7-point Likert-type scale ranging from 1, 'no opportunity' to 7, 'full opportunity'.

The second (alternative) set of items, COLT3 and COST4, is adapted from McNall and Stanton (2011), and is widely used to assess employees' ability to control EPM. In COLT3 and COST4, participants are asked to inform 'Whether employees have the option to turn off monitoring devices or quit monitoring software/applications during work (or non-work) hours when privacy is needed'. Participants are asked to select 'yes' or 'no' to indicate their ability to cease monitoring at work.

## **2.6 Measurement Validation**

This section discusses the validation process for the developed scale for EPM invasiveness. Building on Ravid et al.'s (2020) theoretical framework, which posits that EPM invasiveness is comprised of four sub-elements, the initial stage of the validation process in this study evaluates whether the measurement items in the scale for EPM invasiveness capture four differentiated dimensions of EPM invasiveness. Given that this study proposes grouping the four elements of the invasiveness of EPM into two sub-constructs— EPM ST (the scope and target of EPM) and EPM CC (the constraints and control placed on EPM; see Section 2.4.5)—the validation process involves assessing the appropriateness of this approach. Following Churchill's (1979) suggestion, the validation methods include measurement purification (Section 2.6.1), reliability and validity assessment, and norms development (Section 2.6.2).

### **2.6.1 Measurement Purification (Pilot Survey)**

This study conducted a pilot online survey using the large international online research panel, Prolific,<sup>9</sup> to collect data for measurement purification. Prior to the pilot survey, senior researchers in management control and information systems reviewed the measurement items. Their feedback helped modify item descriptions that enhanced the clarity and relevance of the items. This pilot survey employed a longitudinal approach with a participant screening survey followed by a formal survey. Participation was voluntary, and their consent was indicated by proceeding to answer the survey questions. Participants received £0.13 (approximately USD 0.15) as monetary remuneration for completing their responses in an average 1-minute screening survey.

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<sup>9</sup> Prior literature indicates that Prolific has the necessary capabilities to provide high-quality data for research purposes (Peer et al. 2017). Palan and Schitter (2017) also highlight the benefits of using Prolific for recruiting a diverse range of participants, particularly in comparison to other online platforms.

Those who passed the screening survey and successfully submitted their responses in the formal survey received £2.00 (approximately USD 2.38) for an average 10-minute survey (equivalent to an hourly rate of £16.18; approximately USD 19.22).

The following sample inclusion criteria were applied in participant recruitment on Prolific. First, the respondent's organisation had to be located in the US and have a minimum of 100 employees. This criterion was based on the literature and anecdotal evidence suggesting that a significant number of US organisations adopted remote work as an optional work arrangement in 2020, especially larger organisations (Dingel and Neiman 2020; National Association for Business Economics 2020). The minimum employee requirement ensured that participants' organisations were large enough to have formalised management controls, such as EPM (Chong and Wang 2019). Second, respondents had to have at least 3 months of cumulative remote-working experience in the preceding 24 months with their current organisations. Third, respondents had to be aware that their organisation monitored employees' activities and performance via EPM. Detailed questions in the participant screening survey are shown in Appendix A.

The pilot survey was conducted in August 2021.<sup>10</sup> A total of 60 respondents met the inclusion criteria, and 52 responded the survey; 2 responses were discarded as incomplete, resulting in a usable sample of 50 valid responses (usable rate of 83.333%). Among the 50 respondents, 19 were female. On average, respondents had been with their current organisation for 5.321 years and had been working remotely for 17.200 months (approximately 1.5 years). The average age of respondents was 37.160 years, with 52% holding job positions below the manager level. Regarding industry distribution, 18% of respondents worked in finance and insurance, 8% in healthcare,

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<sup>10</sup> The window for each round of participant recruitment was limited to 1 week to mitigate potential bias resulting from delayed responses. Once participants began the survey, respondents were not allowed to finish the survey later.

and 4% in government and public administration, with the remainder spread across various other industries.

Using pilot survey data, this study conducted exploratory factor analysis (EFA) to initially purify the measurement items. First, all items were forced onto a single factor, which explained only 45.03% of the total variance. This result suggests that EPM invasiveness is a multidimensional construct, which consistent with the literature (Ravid et al. 2020). Second, further EFA identified four dimensions based on eigenvalues exceeding 1. As shown in Table 2.2, this analysis indicates that component loadings of measurement items mostly surpass the 0.5 threshold (Hair et al. 2019). This provides initial evidence that these items are properly constructed. However, several items of EPM constraints exhibited  $p$ -values above 0.05 and high variance inflation factors (VIFs), suggesting potential multicollinearity issues. Following Churchill's (1979) suggestion, the internal consistency and reliability were evaluated using Cronbach's alpha. Based on Nunnally's (1978) guidelines, a score of 0.70 is an acceptable threshold for internal consistency in exploratory research. Results are reported in Table 2.3. While the scale for EPM target slightly lower than this threshold, the scales for EPM constraints controls exhibited Cronbach's alpha values above 0.70.

Overall, the pilot survey indicates that the developed measurement items were well understood and provided preliminary evidence supporting the dimensionality and reliability. While most constructs in the developed measure meet statistical criteria of internal consistency and reliability, prior research emphasised that these criteria are not necessary for formative constructs (Jarvis et al. 2003; Rai et al. 2006). Given these findings and the small size of the pilot survey, all items were retained in the scale. Subsequently, a validation survey involving 355 employees was conducted to further refine and validate the measurement items for EPM invasiveness.

**Table 2.2: Exploratory factor analysis: component loadings with eigenvalues greater than 1 (pilot survey)**

Items	Dimensions			
	1	2	3	4
SCOPE	0.565			
TAGT1	0.769			
TAGT2	0.810			
TAGT3	0.488			
COST1		0.832		
COST2		0.882		
COST3		0.934		
COST4		0.842		
COST5		0.801		
COST6		0.840		
COST7		0.865		
COST8		0.866		
COTL1			0.894	
COTL2			0.738	
COTL3				0.828
COLT4				0.750

*Note:* Extraction method: principal component analysis. Four components were extracted. The results indicate that, for EPM control, the first set of items (COLT1 and COLT2) and the alternative set of items (COLT3 and COLT4) are loaded onto two factors. This table reports the component loadings of each item that is higher than 0.5.

**Table 2.3: Exploratory factor analysis (pilot survey)**

Items	Component loadings				<i>p</i> -value	VIF
	EPM scope	EPM target	EPM constraint	EPM control		
SCOPE	(1.000)				<0.001	0.000
TAGT1		0.772			<0.001	1.298
TAGT2		0.859			<0.001	1.428
TAGT3		0.451			0.005	1.116
COST1			0.814		0.162	6.072
COST2			0.870		0.157	5.293
COST3			0.938		0.133	9.493
COST4			0.861		0.157	5.372
COST5			0.775		0.154	9.171
COST6			0.819		0.143	8.244
COST7			0.869		0.138	13.583
COST8			0.876		0.139	9.827
COTL1				0.655	0.014	1.900
COTL2				0.704	0.004	2.229
COTL3				0.818	0.005	2.184
COTL4				0.727	0.005	2.431
Average variance extracted	-	0.530	0.778	0.592	-	-
Composite reliability	-	0.765	0.965	0.852	-	-
Cronbach's alpha	-	0.537	0.959	0.768	-	-

*Note:* VIF refers to item's variance inflation factor. Expectation: *p*-value < 0.05; VIFs < 5.0 are desirable for formative items. Cronbach's alpha > 0.70. The reliability was assessed by Cronbach's alpha. Several items, particularly for EPM constraints shows *p*-value greater than 0.05 and have high VIFs. As the sample size for the pilot survey is small, all measurement items were retained and were further validated through a validation survey with a large sample.

## 2.6.2 Measurement Validation (Validation Survey)

This study conducted an online survey with a large sample of employees using Prolific to collect data for further measurement validation. The validation survey applied the same selection criteria as the pilot survey to screen participants<sup>11</sup> Participants who passed the screening survey were invited to participate in the formal survey. Participation in this validation survey was voluntary. Respondents who completed the 1-minute participant screening survey received £0.13 (approximately USD 0.15) as monetary remuneration. Those who passed the screening and completed the 20-minute formal survey received £4.00 (approximately USD 4.75), equating to an hourly rate of £16.18 (approximately USD 19.22).

The formal validation survey ran from October 2021 to November 2021.<sup>12</sup> A total of 450 respondents met the inclusion criteria, and 391 responded to the survey; 17 responses were discarded as incomplete. Among the returned and completed questionnaires, 19 were excluded for failing the inclusion criteria check questions (i.e., no EPM practices listed in the checklist were being used in their organisation), resulting in a usable sample of 355 respondents, with a usable rate of 90.79%. Detailed questions in the validation survey are in Appendix B.

Table 2.4 presents the demographic information, job level and type of industry relating to the final sample for measurement validation. Among the 355 respondents, approximately two-thirds were female. The respondents, on average, had been with their current organisation for 5.321 years and had been working remotely in this organisation for 16.531 months (approximately 1.4 years). The average age of

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<sup>11</sup> Participants were required to work for large US organisations, have experience with remote work, and have experience being electronically monitored. Appendix A reports the questions in the screening survey.

<sup>12</sup> The window for each round of participant recruitment was limited to 1 week to mitigate potential bias resulting from delayed responses. Once participants began the survey, respondents were not allowed to finish the survey later.

respondents was 34.232 years, with 66.76% holding positions below the manager level. In terms of industries, 15.49% of the respondents worked in finance and insurance, 13.80% in healthcare and 11.55% in information technology, with the remainder distributed across various other industries.

**Table 2.4: Demographic information, job levels and type of industries (validation)**

<i>Panel A: Demographic information of respondents and organisations</i>				
	Mean	Standard deviation	Minimum	Maximum
Time in organisation (years)	5.321	5.360	0.25	30
Remotely working time in organisation (months)	16.531	6.756	3	72
Age (years)	34.232	10.510	19	65
	Number	Percentage		
<b>Gender:</b>				
Male	132	37.18%		
Female	222	62.53%		
Total	355			
	Number	Percentage		
<b>Manager:</b>				
Job level is below manager	237	66.76%		
Job level is or above the manager	118	33.24%		
<i>Panel B: Type of industry/sector</i>				
	Number	Percentage		
Agriculture, Forestry, Fishing and Hunting	2	0.56%		
Arts, Entertainment, and Recreation	14	3.94%		
Broadcasting	1	0.28%		
Computer and Electronics Manufacturing	4	1.13%		
Construction	6	1.69%		
Education	32	9.02%		
Finance and Insurance	55	15.49%		
Government and Public Administration	25	7.04%		
Health Care and Social Assistance	49	13.80%		
Hotel and Food Services	1	0.28%		
Information technology	41	11.55%		
Legal Services	6	1.69%		
Military	-	-		
Publishing	2	0.56%		
Real Estate, Rental and Leasing	7	1.97%		
Retail	11	3.10%		
Scientific or Technical Services	21	5.92%		
Software	21	5.92%		
Telecommunications	10	2.82%		
Transportation and Warehousing	10	2.82%		
Utilities	4	1.13%		
Wholesale	5	1.41%		
Other Manufacturing	17	4.79%		
Other Industry	11	3.10%		

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*Panel C: Education background*

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	Number	Percentage
High school or equivalent	5	1.42%
Graduate diploma	55	15.49%
Bachelor degree	204	57.46%
Master or higher degree	91	25.63%

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### **2.6.2.1 Item Specification: Redundant Items**

This study validates the measurement of EPM invasiveness via the following steps. First, the study conducts EFA forcing all items onto a single factor to examine whether EPM invasiveness is a multidimensional construct. The analysis reveals that only 41.87% of total variance is explained by the first component, suggesting EPM invasiveness is a multidimensional construct, which aligns with the literature (Ravid et al. 2020). Table 2.5 reports EFA component loadings with eigenvalues greater than 1. This analysis extracted four dimensions, indicating that the items in the developed scale represent multiple dimensions of EPM invasiveness.

Second, this study conducts EFA to evaluate the factor loadings of items associated with the first-order constructs (i.e., EPM scope, EPM target, EPM constraints, and EPM control). Since EPM scope is measured by a single item, EFA is not conducted for EPM scope (Wang et al. 2020). Table 2.6 provides details on the component loadings, p-values, and variance inflation factors (VIF) of each item related to the first-order constructs. All measurement items have p-values below the recommended threshold of 0.05, as suggested by Hair et al. (2010). The component loadings of all items exceed 0.5 (Hair et al. 2019), indicating that all items are appropriately constructed and effectively represent their associated components. These results support that the formative latent variable measurement items are properly constructed. Overall, the results in Tables 2.5 and 2.6 are consistent with the pilot survey, suggesting that the items in the developed scale for EPM invasiveness capture the four dimensions of this construct. This aligns with the conceptualisation of EPM invasiveness as defined by Ravid et al. (2020).

**Table 2.5: Exploratory factor analysis: component loadings with eigenvalues greater than 1 (validation)**

Items	Dimensions			
	1	2	3	4
SCOPE	0.570			
TAGT1	0.642			
TAGT2	0.637			
TAGT3	0.629			
COST1		0.789		
COST2		0.820		
COST3		0.874		
COST4		0.846		
COST5		0.867		
COST6		0.880		
COST7		0.884		
COST8		0.859		
COTL1		0.531	0.617	
COTL2			0.588	
COTL3			0.669	0.511
COLT4			0.502	0.654

*Note:* Extraction method: principal component analysis. Four components were extracted. The results indicate that COLT3 and COLT4 are cross-loaded onto two factors. This result suggests that these two items are related to multiple underlying dimensions. Given that COLT3 and COLT4 measure employees' ability to control EPM during different periods (COLT3: work hours; COLT4: non-work hours), it is reasonable to expect that these two items could be interpreted differently by respondents. This table reports the component loadings of each item that is higher than 0.5.

**Table 2.6: Exploratory factor analysis (validation)**

Items	Component loadings				<i>p</i> -value	VIF
	EPM scope	EPM target	EPM constraint	EPM control		
SCOPE	(1.000)				<0.001	0.000
TAGT1		(0.782)			<0.001	1.237
TAGT2		(0.808)			<0.001	1.261
TAGT3		(0.548)			<0.001	1.058
COST1			(0.819)		0.005	4.909
COST2			(0.851)		0.004	5.389
COST3			(0.893)		0.002	5.577
COST4			(0.855)		0.003	4.888
COST5			(0.884)		0.003	6.903
COST6			(0.891)		0.002	7.176
COST7			(0.893)		0.002	6.856
COST8			(0.859)		0.003	6.207
COTL1				(0.775)	<0.001	1.959
COTL2				(0.797)	<0.001	2.001
COTL3				(0.696)	<0.001	1.463
COTL4				(0.636)	<0.001	1.405

*Note:* This table presents the component loadings of each item. VIF refers to item's variance inflation factor. Expectation: *p*-value < 0.05; VIFs < 5.0 are desirable for formative items.

When assessing the two sets of alternative measurement items for EPM constraints and EPM control, this study selects items based on theoretical considerations. The first set of items, consisting of COST1, COST2, COST3 and COST4, is designed to align with the EPM constraint definition proposed by Ravid et al. (2020). These items directly assess the explicit limitations imposed by an organisation on when and how EPM is employed, how data are utilised and who has access to the collected EPM data. Conversely, the second set of items, comprised of COST5, COST6, COST7 and COST8 and adapted from Zweig and Webster (2002), primarily focus on capturing the justifications behind an organisation's EPM use, without capturing the constraints on EPM use. Prior literature suggests that an organisation's constraints on EPM use not only clarify how EPM is employed but also play a crucial role in safeguarding employee rights and privacy in this context (Alder and Ambrose 2005; Alge 2001). These constraints extend beyond mere justification and assess the practical and concrete rules that define the boundaries of EPM use.

Therefore, in comparison with the second set of items, the first set provides a more comprehensive assessment of EPM constraints. It measures an organisation's specific and constraints, which are central to the concept of EPM constraints. Further, this study conducted a collinearity test, the results of which indicate minimal collinearity within the first set of items, with the VIF for all items well below the commonly applied threshold of 5 (Hair et al. 2010). Conversely, items in the second set surpass this threshold. These results highlight that the items in the first set are significant contributors to the EPM constraints construct. Therefore, this study uses the first set of items (COST1, COST2, COST3 and COST4) to measure EPM constraints.

When measuring EPM control, this study chooses to exclude the second (alternative) set of items (COLT3 and COLT4) and relies solely on the first set of items

(COLT1 and COLT2). The first set captures a broader concept of EPM control by evaluating the extent to which employees influence the design and use of EPM. This aligns with the central focus outlined in the definition of EPM control proposed by Ravid et al. (2020). In contrast, the second set assesses employees' ability to deactivate monitoring devices or quit monitoring software/applications, focusing solely on employees' capacity to influence the use of EPM (i.e. deactivate EPM). Since employees' input into EPM design is an important conceptual component of EPM control, this aspect is not captured by the items in the second set. Moreover, the first set of items employs a Likert-type scale, which is more consistent with the other measurement items included in the developed scale and allows for a more detailed capture of respondents' opinions in terms of their control on EPM. In contrast, the second set of items uses a binary 'yes' or 'no' response, resulting in a less detailed evaluation and potentially providing less comprehensive information. Therefore, COLT3 and COLT4 are excluded for the theoretical considerations. This decision was made to ensure the focus on the most relevant and theoretically grounded aspects of EPM control in the context of this study. Finally, the scale is trimmed to ten items, as reported in Table 2.7.

**Table 2.7: The final items in the scale for the invasiveness of EPM**

Items	Scale	Sub-construct	Type
SCOPE	The total number of EPM practices captured employees' working behaviour (see Table 2.1 for the 17 items in checklist)	Yes/No	EPM scope Formative
<i>EPM practices used by your organisation capture information about:</i>			
TAGT1	Employees' thoughts, feelings and physiology (e.g., biometric information, social media feed, personal email content)	Seven Likert scale ranges from 1 (strongly disagree) to 7 (strongly agree) with a midpoint (neither agree nor disagree)	EPM target Formative
TAGT2	Employees' body or location (e.g., video monitoring, GPS tracking)		
TAGT3	Employee tasks or task behaviour (e.g., keystroke tracking, working file monitoring)		
<i>To what extent your organisation has explicit policies on:</i>			
COST1	When EPM practices could occur	Seven Likert scale ranges from 1 (very little) to 7 (very much) with a midpoint (neutral)	EPM constraint Formative
COST2	How EPM practices could occur		
COST3	How the collected monitoring data would be used		
COST4	Who could access the collected monitoring data		
COTL1	Employees have input into the design of EPM practices.	Seven Likert scale ranges from 1 (strongly disagree) to 7 (strongly agree) with a midpoint (neither agree nor disagree)	EPM control Formative
COTL2	To what extent employees have an opportunity to influence the use of electronic performance monitoring.	Seven Likert scale ranges from 1 (no opportunity) to 7 (full opportunity) with a midpoint (moderate level of opportunity)	

### **2.6.2.2 Reliability and Validity Assessment: Four Sub-elements**

This study evaluates the reliability and validity of the scale for each sub-element of EPM invasiveness. As shown in Table 2.8, the factor loadings for all items associated with their respective constructs exceeded 0.50 (Hair et al., 2019). The composite reliability values were above the threshold of 0.70, and Cronbach's alphas were above 0.50. These results suggest satisfactory internal consistency.

Following Churchill's (1979) suggestion, convergent and discriminant validity were also assessed. Convergent validity was shown in every scale of the first-order constructs of EPM invasiveness, as all average variance extracted (AVE) scores exceeded 0.50 (see Table 2.8). This indicates that there was more information than noise in the scales (Götz et al. 2009) and suggests satisfactory convergent validity (Chin 1998). Discriminant validity was evaluated based on Fornell and Larcker's (1981) criterion, which states that the square root of each construct's AVE should be higher than its inter-construct correlation. In this study, the results presented in Table 2.9 indicate that the highest inter-construct correlation was 0.390, while the lowest square root of the AVE score was 0.722, demonstrating good discriminant validity.

Moreover, content validity was assessed through a review process conducted by senior researchers with expertise in management control and information systems. This was complemented by discussions in research seminars with additional experts in these fields. The developed measure received positive feedback during the expert reviews, indicating that the measurement items effectively capture the distinct dimensions of EPM invasiveness and demonstrate satisfactory content validity. The alignment between expert feedback and statistical analysis suggests that the developed scales are well-constructed, supporting their ability to measure EPM invasiveness.

**Table 2.8: First-order confirmatory factor analysis (validation)**

Measurement items		Factor structure and loadings			
		<i>EPM</i> <i>scope</i>	<i>EPM</i> <i>target</i>	<i>EPM</i> <i>constraints</i>	<i>EPM</i> <i>control</i>
<i>EPM</i> <i>Scope</i>	The total number of EPM practices captured employees' working behaviour (see Table 2.5 for the 17 items in checklist)	-			
<i>EPM practices used by your organisation capture information about:</i>					
<i>EPM</i> <i>Target</i>	TAGT1 Employees' thoughts, feelings and physiology (e.g., biometric information, social media feed, personal email content)		(0.782)		
	TAGT2 Employees' body or location (e.g., video monitoring, GPS tracking)		(0.808)		
	TAGT3 Employee tasks or task behaviour (e.g., keystroke tracking, working file monitoring)		(0.548)		
<i>To what extent the organisation has explicit policies on:</i>					
<i>EPM</i> <i>Constraints</i>	COST1 When EPM practices could occur			(0.895)	
	COST2 How EPM practices occur			(0.926)	
	COST3 How the collected monitoring data would be used			(0.926)	
	COST4 Who could access the collected monitoring data			(0.883)	
<i>The extent to which:</i>					
<i>EPM</i> <i>Control</i>	COTL1 Employees have input into the design of EPM practices.				(0.921)
	COTL2 Employees have input into the use of EPM practices.				(0.921)
Average variance extracted		-	0.522	0.825	0.848
Composite reliability		-	0.761	0.949	0.918
Cronbach's alpha		-	0.530	0.929	0.821
<i>Note:</i> This table presents the factor loadings, Cronbach's alpha, composite reliability, and AVE for each scale after item specification. Expectations: Composite reliability > 0.70; Cronbach's alpha > 0.50; Factor loading for an item associated with its construct > 0.50; AVE > 0.50.					

**Table 2.9: Correlations among the four sub-elements of EPM invasiveness and square roots of average variance extracted**

	AVE	Square root of AVE	Inter-construct correlation (Spearman correlation coefficient)			
			<i>SCOPE</i>	<i>TARGET</i>	<i>CONSTRAINTS</i>	<i>CONTROL</i>
<i>SCOPE</i>	-	-	1.000	-	-	-
<i>TARGET</i>	0.522	0.722	0.390***	1.000	-	-
<i>CONSTRAINTS</i>	0.825	0.908	-0.278***	-0.230***	1.000	-
<i>CONTROL</i>	0.848	0.921	-0.046	-0.230***	0.306***	1.000

*Note:* AVE refers to average variance extracted. *SCOPE* refers to the scope of EPM. *TARGET* refers to the target of EPM. *CONSTRAINTS* indicates the constraints placed on EPM use. *CONTROL* is employees' control over EPM use. Given that high EPM constraints and EPM control serve to limit the invasive use of EPM, *CONSTRAINTS* and *CONTROL* are reversed. \*, \*\*, \*\*\* represent two-tailed statistical significance of correlation at the 0.10, 0.05 and 0.01 levels, respectively.

Fornell–Larcker criterion: the square root of the AVE of each construct should be greater than its inter-construct correlation in the model.

### 2.6.2.3 Reliability and Validity Assessment: Two Sub-constructs

This section discusses the method for calculating the index of formative constructs and assesses the appropriateness of grouping the four sub-elements of EPM invasiveness into two sub-constructs: EPM ST and EPM CC.<sup>13</sup>

According to Götz et al. (2009) and Hair et al. (2010), estimates of measurement items for formative constructs represent multiple regression weights. Since both EPM ST and EPM CC, along with their constituent sub-elements, are formative constructs, this study follows the methodology outlined by Diamantopoulos and Winklhofer (2001) to calculate the index for formative constructs. This involves aggregating the values of their sub-elements (items), taking into account their respective weights. For the index calculation of EPM invasiveness, *SCOPE* was rescaled from a 1 to 17 scale to a 1 to 7 scale, using the method suggested by Kock and Moqbel (2016)<sup>14</sup>, facilitating the aggregation of sub-elements values into an overall score. Following Chong and Wang (2019), this study employs WarpPLS Version 7.0 software package<sup>15</sup> (Kock 2020) to obtain the weights for each sub-construct (item). Subsequently, this study calculates the formative construct index by multiplying the score of each sub-construct (item) by its corresponding weight. The indices for *SCOPE*<sup>16</sup>, *TARGET*, *CONSTRAINTS*, and

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<sup>13</sup> EPM ST refers to the invasive use of EPM, comprised of EPM scope and EPM target. EPM CC represents an organisation's policies and actions on EPM, limiting its invasive use, and it consists of EPM constraints and EPM control. Both EPM ST and EPM CC are considered formative constructs.

<sup>14</sup> A linear transformation is applied to preserve a proportional relationship between the original and adjusted values. The formula is expressed as 
$$\text{NewValue} = \frac{(\text{OldValue}-1) \times (7-1)}{(17-1)} + 1.$$

<sup>15</sup> WarpPLS 7.0 software serves as a reliability and validity assessment tool used to evaluate structural equation models using the partial least squares approach (Chong and Wang 2019; Kock 2020). The items on all formative constructs are positive and weights above the recommended minimum of 0.30 (Bedford and Malmi 2015; Hair et al.2010).

<sup>16</sup> This study conducted a logistic regression to assess the relatedness of *SCOPE* to the other three elements of EPM invasiveness. *SCOPE* was measured as a dichotomous variable (using the median as the cut-off, higher = 1, otherwise 0). The weighted average scores of *TARGET*, *CONSTRAINTS*, and *CONTROL* were used as predictors. Consistent with the theoretical justification discussed in Section 2.4.5, the regression results suggest that *SCOPE* is positively associated with *TARGET*, *CONSTRAINTS*,

*CONTROL* were calculated as the sum of the values of their respective measurement items, considering the adjusted for the corresponding item weights. The EPM invasiveness score (*EPMINV*) is computed by summing the weighted scores of each sub-element (i.e., *SCOPE*, *TARGET*, *CONSTRAINTS*, and *CONTROL*), where each score is multiplied by its corresponding weight.

The results of the CFA, presented in Table 2.10, indicate that *SCOPE* and *TARGET* have positive factor loadings associated with *EPMINV*, which greater than 0.50. However, *CONSTRAINTS* and *CONTROL* exhibit negative component loadings. The presence of both positive and negative factor loadings suggests a relationship between the sub-elements EPM invasiveness, potentially following a specific pattern. These findings align with the conceptual framework of EPM invasiveness discussed in Section 2.4.5, which posits that the scope and target of EPM, and the constraints and control of EPM, work in opposite ways to contribute to EPM invasiveness. This result suggests grouping the four sub-elements of EPM invasiveness into two sub-constructs: EPM ST and EPM CC.

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and *CONTROL*, with all relationships being statistically significant ( $p$ -value<0.05). Therefore, this study rescaled *SCOPE* and combined it with other sub-elements of EPM invasiveness to get a formative index.

**Table 2.10: Second-order confirmatory factor analysis—four sub-elements**

	Combined factor loading	Composite reliability	Cronbach's alpha	AVE
<i>EPMINV</i>		0.015	-0.044	0.438
<i>SCOPE</i>	0.680			
<i>TARGET</i>	0.729			
<i>CONSTRAINTS</i>	-0.689			
<i>CONTROL</i>	-0.533			

*Note:* This table presents the results of the confirmatory factor analysis, including combined loadings, composite reliability, Cronbach's alpha and AVE from the partial least squares (PLS) measurement model. Following the theoretical framework developed by Ravid et al. (2020), this analysis considers EPM scope, EPM target, EPM constraints and EPM control at the same construct level, all loading onto *EPMINV*. *EPMINV* refers to the formative index of EPM invasiveness, which is calculated by summing the composed values of sub-constructs, namely EPM scope, EPM target, EPM constraints and EPM control, based on their respective weights. *SCOPE* refers to the scope of EPM. *TARGET* refers to the target of EPM. *CONSTRAINTS* refers to the constraints placed on EPM use. *CONTROL* is employees' control over EPM use. Given that high EPM constraints and EPM control serve to limit the invasive use of EPM, these two factors are reversed before being combined with EPM scope and EPM target.

In the following steps, this study assesses the appropriateness of grouping the four sub-elements into EPM ST and EPM CC. The index of EPM ST (*EPM\_ST*) is calculated as a formative index based on the sum of the values of *SCOPE* and *TARGET*, considering their respective weights. Similarly, the index of EPM CC (*EPM\_CC*) is measured as a formative index based on the sum of the values of *CONSTRAINTS* and *CONTROL*, weighted accordingly.

The CFA results presented in Table 2.11 also indicate that the factor loadings for *SCOPE* and *TARGET*, linked with the higher-order constructs (i.e., *EPM\_ST*), exceeded the threshold of 0.80 (Hair et al., 2019). Similarly, *CONSTRAINTS* and *CONTROL* exhibit positive and high component loadings with *EPM\_CC*. This suggests that the sub-element scores (*SCOPE* and *TARGET* for *EPM\_ST*; *CONSTRAINTS* and *CONTROL* for *EPM\_CC*) are combined in a way that accounts for their individual contributions, providing a comprehensive measure of each sub-construct of EPM invasiveness. Additionally, both *EPM\_ST* and *EPM\_CC* demonstrated high composite reliability, with values exceeding 0.70, indicating satisfactory internal consistency (Götz et al. 2009). The AVE scores for both *EPM\_ST* and *EPM\_CC*, exceeding 0.50, indicate the convergent validity of the measures (Chin 1998). Nevertheless, although Cronbach's alpha for *EPM\_CC* falls slightly below 0.50, prior research indicates that exceeding this value is not a necessary requirement for formative constructs (Bagozzi 1994; Jarvis et al. 2003; Rai et al. 2006).

In summary, these results demonstrate the reliability and validity of the EPM invasiveness scale developed in this study and provide strong support for grouping the four sub-elements of EPM invasiveness into EPM ST and EPM CC.

**Table 2.11: Second-order confirmatory factor analysis—two sub-constructs**

	Combined factor loading	Composite reliability	Cronbach's alpha	Average variance extracted
<i>EPM_ST</i>		0.825	0.575	0.702
<i>SCOPE</i>	0.838			
<i>TARGET</i>	0.838			
<i>EPM_CC</i>		0.790	0.468	0.653
<i>CONSTRAINTS</i>	0.808			
<i>CONTROL</i>	0.808			

*Note:* This table reports the results of the confirmatory factor analysis (combined loadings, composite reliability, Cronbach's alpha and average variance extracted from the PLS measurement model) when grouping EPM Scope, EPM Target, EPM Constraints and EPM controls into two sub-constructs, *EPM\_ST* and *EPM\_CC*. *EPM\_ST* contributes to the invasiveness of EPM, and it is calculated as a formative index based on the values of *TARGET* and *SCOPE*, considering their respective weights. *EPM\_CC* refers to the organisation's constraints and control on EPM. It is measured as a formative index based on the values of *CONSTRAINTS* and *CONTROL*, weighted accordingly. When measuring *EPM\_CC*, *CONSTRAINTS* and *CONTROL* are not reversed. *SCOPE* refers to the scope of EPM. *TARGET* refers to the target of EPM. *CONSTRAINTS* refers to the constraints placed on EPM use. *CONTROL* is employees' control over EPM.

#### 2.6.2.4 Nomological Validation

To examine the external validity of the newly developed scale of EPM invasiveness, this study conducts nomological validation by linking the EPM ST and EPM CC scales to other constructs for which relationships with the invasiveness of EPM have been suggested in prior literature. These constructs include perceived invasion of privacy (e.g., Yost et al. 2019), job autonomy (e.g., Ravid et al. 2023), monitoring fairness (e.g., Jeske and Santuzzi 2015), and perceived usefulness of monitoring (e.g., Zweig and Webster 2002). Perceived invasion of privacy (*PRIVACY*) is measured using five items adapted from Yost et al. (2019). Monitoring fairness (*FAIR*) is measured using three items from Alder et al. (2008). Job autonomy (*AUTONOMY*) is measured using three items adapted from Stiglbauer (2007). Two items from Zweig and Webster (2002) measure participants' perceived usefulness of monitoring. These items are measured on a 7-point Likert scale ranging from 1, 'strongly disagree' to 7, 'strongly agree'. As results shown in Table 2.12, the above measures meet the criteria for reflective scales (Götz et al. 2009; i.e., composite reliability > 0.7; AVE > 0.5), suggesting discriminant validity.

This study assesses discriminant validity among all construct scales using two heuristics. First, the AVE values for all pairs of scales are higher than the pairwise squared estimated correlation. Second, this study employs the heterotrait–monotrait (HTMT) ratio criterion, and in all cases (as shown in Panel A of Table 2.13), the ratios are below 0.90 (Henseler et al. 2015), suggesting discriminant validity. Subsequently, this study estimates the structural model with the partial least squares structural equation modelling (PLS-SEM) algorithm using a nonparametric bootstrapping routine with 5,000 samples. The resulting statistics suggest the model fits the data well. Consistent with the literature (e.g., McNall and Roch 2009; Yost et al. 2019), the results

in Panel B of Table 2.13 suggest that *EPM\_ST* (*EPM\_CC*) is positively (negatively) related to *PRIVACY* and negatively (positively) related to each of *AUTONOMY* and *FAIR*. These results indicate that the developed scale of EPM invasiveness is conceptually linked to relevant constructs indicated in previous EPM studies and has external validity.

**Table 2.12: Confirmatory factor analysis for variable in the nomological analysis**

	Measurement items	Loadings	Cronbach's alpha	Composite reliability	AVE
Invasion of privacy ( <i>PRIVACY</i> )	1 I feel that my organisation's monitoring policies and the manners of monitoring are an invasion of privacy.	0.872	0.904	0.929	0.725
	2 The way that my organisation monitors its employees makes me feel uneasy.	0.885			
	3 I feel personally invaded by the practices used by my organisation to collect personal information.	0.919			
	4 I feel comfortable about the types of personal information that my organisation collects.	0.768			
	5 I have little reason to be concerned about my privacy here in my organisation.	0.806			
Job autonomy ( <i>AUTONOMY</i> )	1 Working remotely allows me to make my own decisions about how to schedule my work.	0.767	0.625	0.800	0.573
	2 Working remotely allows me to make a lot of decisions on my own.	0.811			
	3 Working remotely allows me to decide on my own how to go about doing my work.	0.688			
Monitoring fairness ( <i>FAIR</i> )	1 Overall, the tools used in my organisation to monitor employee's working activities are fair.	0.960	0.964	0.977	0.933
	2 The procedures used to monitor my working activities are fair.	0.973			
	3 I believe the practices the organisation monitors employees' working activities are fair.	0.965			

*Note:* Each item is scored on a 7-point agreement rating scale ranging from 1, 'strongly disagree' to 7, 'strongly agree' with a midpoint 'Neither agree nor disagree'.

**Table 2.13: Heterotrait–Monotrait ratios and correlation with constructs**

<i>Panel A: HTMT ratios</i>					
Constructs:	(1)	(2)	(3)	(4)	(5)
<i>EPM_ST</i> (1)	-				
<i>EPM_CC</i> (2)	0.550				
<i>PRIVACY</i> (3)	0.256	0.351			
<i>AUTONOMY</i> (4)	0.191	0.176	0.092		
<i>FAIR</i> (5)	0.115	0.446	0.821	0.113	-
<i>Panel B: Correlations with constructs</i>					
Constructs:	(1)	(2)	(3)	(4)	(5)
<i>EPM_ST</i> (1)	(0.834)				
<i>EPM_CC</i> (2)	0.285***	(0.808)			
<i>PRIVACY</i> (3)	0.189***	-0.225***	(0.852)		
<i>AUTONOMY</i> (4)	-0.102*	0.033	-0.021	(0.757)	
<i>FAIR</i> (5)	-0.086	0.300***	-0.764***	0.086	(0.966)

*Note:* HTMT refers to the heterotrait–monotrait ratio of correlations. *EPM\_ST* represents the invasive use of EPM, and it is calculated as a formative index based on the values of *TARGET* and *SCOPE*, considering their respective weights. *EPM\_CC* refers to the organisation's constraints and control on EPM. It is measured as a formative index based on the values of *CONSTRAINTS* and *CONTROL*, weighted accordingly. *PRIVACY* refers to employees' perceived invasion of privacy of monitoring. *FAIR* captures employees' perceived monitoring fairness. *AUTONOMY* refers to employees' perceived job autonomy. HTMT ratios are all below 0.90. Square roots of AVEs are reported in parentheses as shown diagonally. VIFs acceptable if < 5. VIFs: *EPM\_ST* = 1.247; *EPM\_CC* = 1.418; *WI* = 1.078; *PRIVACY* = 2.794; *AUTONOMY* = 1.029; *FAIR* = 2.814. \*, \*\*, \*\*\* represent two-tailed statistical significance of correlation at the 0.10, 0.05 and 0.01 levels, respectively.

### **2.6.2.5 Norms Development**

This study aims to develop norms for the invasiveness of EPM to assist in measuring and interpreting the extent of intrusion of EPM on employees' control over personal or work-related information and activities. According to Urbina (2004), a large sample size is essential to support the stability of the obtained scale scores. Given that the scale is designed to assess employee perceptions of the invasiveness of EPM, this study conducted both pilot and validation surveys. These surveys involved more than 500 employees with experience being electronically monitored by their organisations. The survey data enables this study to use over 400 valid responses to validate the developed measure. This sample size is large to reasonably represent the population and capture employees' perceptions of EPM invasiveness at work (Urbina 2004). Additionally, MacKenzie et al. (2011) emphasise that norms may change over time and suggest the need for periodic updates to norms measurement. As organisational monitoring practices evolve with technological advances, this study highlights the necessity of periodically updating the measurement of norms for EPM invasiveness to ensure alignment with shifts in EPM strategies and to reflect changes in employees' perceptions of EPM use.

Furthermore, the developed scale was evaluated through discussions in research seminars attended by senior researchers with expertise in management control and information systems. It received positive feedback, with reviewers supporting that the measurement items effectively capture the distinct dimensions of EPM invasiveness. However, the scale has not yet been assessed and calibrated by professionals and industry experts, leading to a limitation that this study acknowledges.

### **2.6.3 Common Method Bias**

Since the data for all the variables were obtained from the participants in a one-time survey, there is a concern that common method variance may influence the relationships in the PLS path model. Common method bias is a potential bias that can occur in surveys when responses are influenced by factors unrelated to the construct being measured, such as the wording of the questions or the response options (Change et al. 2010). This bias may arise because of participants' social desirability tendencies, where they tend to provide more socially acceptable responses.

To minimize potential bias in the survey instrument, this study carefully considers the following aspects in its design and result analysis. First, the survey instrument explicitly mentions at the beginning that participants' anonymity will be maintained, and participants are not allowed to change their responses after they have already responded to the questions. Second, this study avoids 'double barrel' questions. Each question in the instrument is specific to one subject to avoid confusion. Following previous literature (MacKenzie and Podsakoff 2012), this study designs the survey instrument using various response formats (e.g., rating scales and forced-choice questions) and uses reverse-coded items (i.e., negatively/positively worded question stems) to help reduce common method bias. Third, participants were instructed to first answer the dependent variable question and then proceed to the independent variable questions. This sequence helps reduce the bias that can occur when responses to the dependent variable question are influenced by a previous question. Fourth, this study limited the participant recruitment window to one week to mitigate late response or non-response biases.

After the data collection, this study assesses common method bias by conducting Harman's one-factor test, a widely used method for examining potential

common method variance. Following the approach outlined by Harman (1976) and later discussed by Aguirre-Urreta and Hu (2019), this study conducts a component analysis by loading all items onto one common factor. This analysis yields five factors, all of which have eigenvalues greater than 1 and collectively explain 66.94% of the variance. Harman's single factor analysis indicates that only 32.86% of the overall variance is accounted for by a single factor, falling below the 50% threshold. This suggests that common method variance does not significantly impact the results (Podsakoff and Organ 1986).

Further, this study tests for non-response bias using analysis of variance techniques. By treating the last group of respondents as the most likely to be similar to non-respondents, a comparison of the first and last quartiles of respondents serves as a test for response bias in the sample (Armstrong and Overton 1977). Specifically, key variables are compared between the first and last 25% of respondents. Results do not indicate significant response bias across these variables. Similar comparisons are made across participants whose organisations are from different industries. The analysis demonstrates that the two groups are statistically similar across all demographics and examined variables.

Based on the analysis and measures taken to mitigate common method bias, this study concludes that common method bias is not a significant threat to the main results of the measurement development for the invasiveness of EPM.

## **2.7 Conclusion**

This study develops and validates a multifaceted measure of EPM invasiveness. Consistent with Ravid et al. (2020), results in this study indicate that EPM invasiveness is a multidimensional construct. Based on the conceptualisation of the sub-elements of EPM invasiveness and the results of the measurement validation, this study suggests

that EPM invasiveness is comprised of two sub-constructs (i.e., EPM ST and EPM CC). EPM ST suggests the invasive use of EPM, which contributes to the invasiveness of EPM. The broader scope and increased targeting of personal information in EPM indicate a more invasive EPM. EPM CC refers to an organisation's constraints and control on EPM, limiting the invasiveness of EPM.

This study contributes to the EPM literature by developing and validating a scale to measure the invasiveness of EPM (Ravid et al. 2023, 2020). The findings of this study extend Ravid et al.'s (2020) theoretical framework by considering the relationships between various dimensions of EPM invasiveness and highlighting the important role of organisational policies and actions in balancing the invasive EPM. The developed scale for EPM invasiveness may be useful for researchers interested in exploring the determinants and consequences of organisations' adoption of EPM. Future research could utilise the developed scale to explore how to manage the adverse effects of invasive technology-based monitoring.

The study also has practical implications for organisational managers and employees regarding performance monitoring. Using a survey, this study demonstrates that the widespread of technology-based employee monitoring in practice. This emphasises the need for regulatory measures to limit invasive monitoring and protect individuals' privacy rights (Ajunwa et al. 2017; Ninus et al. 2021). The scale developed in this study offers a tool for organisational managers and government regulators to more effectively identify and assess the invasiveness of organisational monitoring practices.

This study is subject to several limitations. First, the measurement of EPM scope using a Yes/No scale differs from the Likert scale with anchors used for other sub-elements of EPM invasiveness. Although this study adopts the method from

previous research to assess EPM scope (Wang et al. 2021), this study acknowledges that using consistent measurement scales across items would facilitate more nuanced analyses and composite index calculations. Second, although the developed measure was reviewed by senior researchers in the fields of management control and information systems, it has not been calibrated by professionals and industry experts. Future research could benefit from incorporating feedback from experts in professional fields and conducting longitudinal studies over longer time intervals to refine the scale.

## **Chapter 3: The Impact of the Invasiveness of EPM on Employees' Workplace Isolation in the Remote Work Context**

### **3.1 Introduction**

Advanced technology has enhanced EPM as a valuable management control tool for organisations, particularly in environments where employees work remotely (Holt et al. 2016; Raveendhran and Fast 2021). EPM expands organisational capabilities, extending from assessing performance outcomes to collecting employee inputs and skill data. This advancement leads to a shift from ex post to ex ante management controls (Kellogg et al. 2020; Nappert and Bamber 2023). However, prior research in management control literature has not kept pace with how new technologies change management controls, predominantly focusing on ex post controls that emphasise organisational benefits (e.g., Anderson et al. 2020; Brown et al. 2015; Hao et al. 2021). Despite the widespread adoption of ex ante controls such as EPM in the remote work setting, their effects on employees remain largely unexplored (Bellesia et al. 2023; Kellogg et al. 2020). This study examines the impact of EPM invasiveness on employees' perceived workplace isolation in the remote work context.

Prior research suggests that EPM inevitably invades employee personal information, affects employees' job autonomy (e.g., Jeske and Santuzzi 2015), and alters employer-employee relationship (e.g., Raveendhran and Fast 2021). This raises concerns regarding the unprecedented and invasive nature of EPM, which could potentially lead to employee well-being issues. Workplace isolation is a common and significant well-being issue for remote employees due to physical separation from the workplace and colleagues and increased likelihood of reduced organisational support (Bartel et al. 2012; Golden et al. 2008). Employees experiencing this isolation tend to encounter disruption in performing tasks (Thatcher and Zhu 2006), resulting in

significant costs to employees and organisations (DeWall and Baumeister 2006; Hitlan et al. 2006). Given that organisations increasingly rely on EPM to monitor employees who already have higher risks of experiencing workplace isolation, invasive EPM, characterised by EPM ST, is likely to intensify employees' perceptions of isolation.

This study draws on the conservation of resources (COR) theory to analyse the examined relationship. The COR theory posits that individuals are motivated to protect their resources while acquiring new resources to fulfil their needs (Halbesleben 2006; Halbesleben et al. 2014). Resource acquisition (loss) has positive (negative) impacts on employee motivation and wellbeing (Hobfoll 2011). Losing resources leads to an adverse psychological state that motivates individuals to conserve their resources and refrain from further resource investment, which can trigger further resource loss because of lower resource accumulation (Hobfoll et al. 2018; ten Brummelhuis and Bakker 2012). In the context of remote work, adequate work interactions play an important role in fostering a sense of relatedness among employees (Halbesleben et al. 2014; Van den Broeck et al. 2016). However, high EPM ST, wherein detailed information is automatically collected from employees, tends to diminish managers' needs and motivations to initiate interactions with employees for obtaining performance information. Therefore, this study predicts that higher EPM ST will lead to a greater loss of relatedness and thus higher perceived workplace isolation.

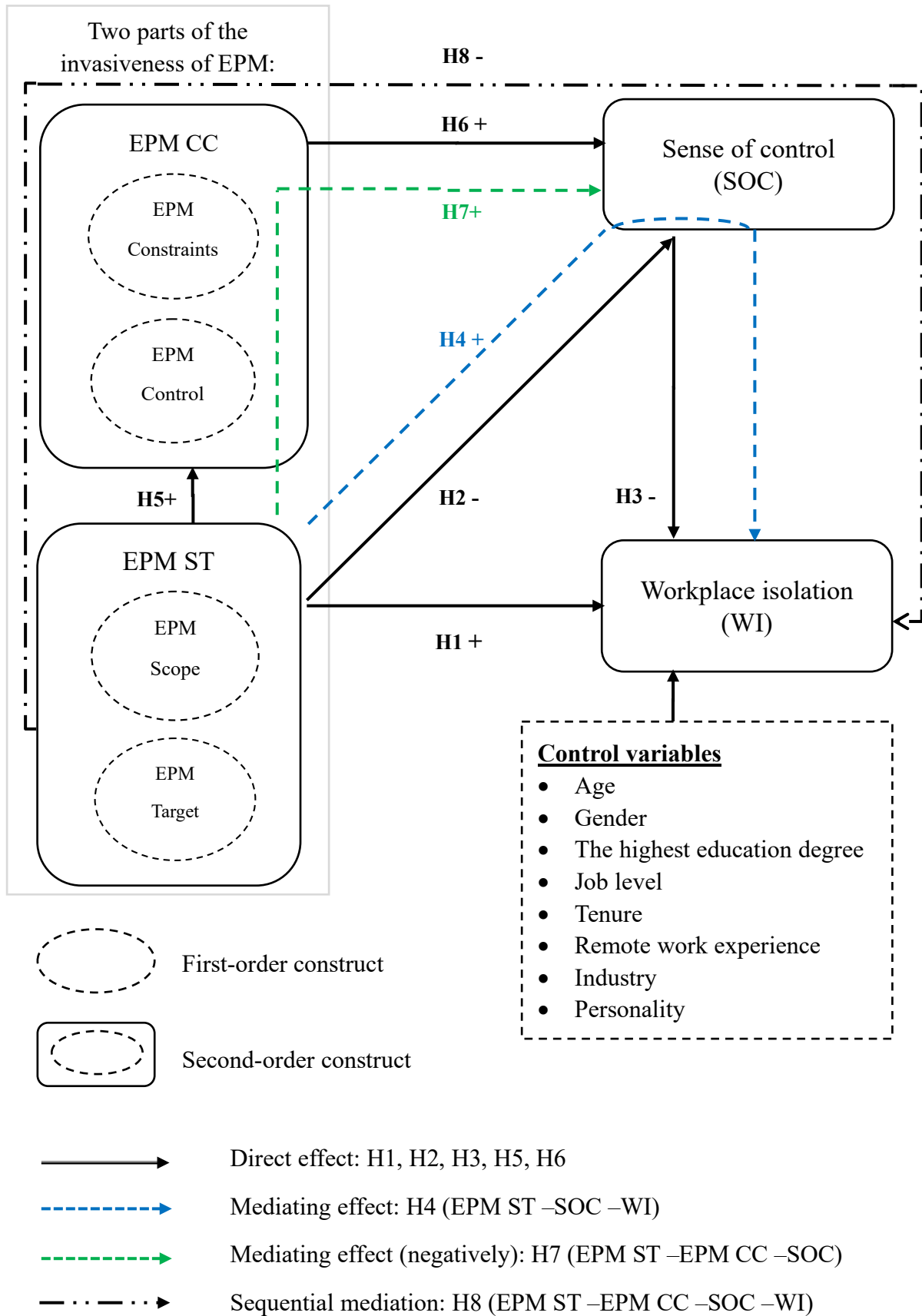
This study also examines whether the relationship between EPM ST and employees' perceived workplace isolation is mediated by employees' sense of control at work. Previous research has shown that a sense of control is a valuable resource that satisfies an individual's need for autonomy (Deci and Ryan 2000; Kühnel et al. 2012). As high EPM ST enhances organisations' capabilities to perform real-time monitoring collecting enormous employee data (Jeske and Santuzzi 2015; Ravid et al. 2020),

employees tend to perceive they have less control over their information and work process under more invasive EPM, which depletes their perceived control at work. According to the COR theory, individuals who experience resource loss tend to refrain from further resource investment (Halbesleben and Bowler 2007). As initiating interactions is a typical resource investment for employees to fulfil their relatedness needs at work (Luria et al. 2009), employees who perceive a low sense of control at work are likely to disengage from interactions at work, rather than initiating such interactions. The reduction in work interactions can intensify feeling of isolation in the remote work context. Therefore, this study posits that the relationship between EPM ST and employees' perceived workplace isolation is mediated by their sense of control.

This study also investigates whether an organisation's constraints and control on EPM (i.e., EPM CC) mediate the relationship between EPM ST, sense of control and workplace isolation. Prior research has shown that organisations implement EPM CC to alleviate employees' concerns and negative reactions towards monitoring (Alder and Ambrose 2005; McNall and Stanton 2011). This study expects that organisations with higher EPM ST have a greater need to use EPM CC to reduce the negative impact of EPM ST on employees' sense of control, thereby leading to less feelings of workplace isolation. Figure 3.1 summarises the theoretical model.

This study tests hypotheses using online survey data collected from 480 employees from various US organisations. The results indicate that employees' sense of control mediates the positive relationship between EPM ST and workplace isolation. Furthermore, this study indicates that EPM ST indirectly impacts employees' perceived workplace isolation through EPM CC and sense of control. This that EPM CC is effective at improving employees' acceptance of monitoring, which mitigates the negative impact of EPM ST on the sense of control and workplace isolation.

**Figure 3.1: Theoretical (structural) model**



This study makes several contributions to the literature. First, this study extends management control literature examining technology-based monitoring. Nappert and Bamber (2023) indicate that new technologies reshape the purpose and nature of performance monitoring by enhancing organisations' capacity to continuously track employee behaviours and obtain detailed data about employee inputs and skills. This capability distinguishes technology-based monitoring from traditional surveillance methods, leading to a transition from ex post to ex ante performance management (Schedlinsky et al. 2020). However, previous research in management control primarily focuses on outcome-based controls that emphasise related benefits to organisations such as reducing agency costs, facilitating decision-making and innovations (e.g., Brown et al. 2015; Hao et al. 2021; Mouritsen and Kreiner 2016). The effect of technology-based ex ante performance monitoring on employee well-being are not well-understood (Bellesia et al. 2023; Kellogg et al. 2020). This study highlights that the invasiveness of EPM plays a crucial role in affecting the balance of resources between employees and employers by exacerbating wellbeing issue (perceptions of workplace isolation). This study also suggests that organisational policies on monitoring use can enhance employee acceptance of monitoring and mitigate its negative impacts on employees' resource loss and subsequent impact on wellbeing.

Second, this study extends the literature on management control by enhancing understanding of performance monitoring in the remote work context. Remote work has increased significantly due to the COVID-19 pandemic, contributing to the widespread adoption of new technologies on employee monitoring (Fayard et al. 2021; Kniffin et al. 2021). However, theoretical and empirical research in this area is lagging behind in analysing the effects of these remote performance monitoring practices on employees (Schedlinsky et al. 2020; Yang et al. 2022). This study theorises and finds

that invasive EPM significantly affects the resource balance between organisations and employees. As invasive EPM intensifies the transfer of work-related and private information from employees to organisations, employees lose valuable basic workplace resources such as autonomy and relatedness. Such a resource transfer effect is particularly concerning in remote work environments, where employees' psychological wellbeing is greatly at risk, given their already limited organisational support and challenges in maintaining connections within their organisation (Bartel et al. 2012; Golden et al. 2008). The findings of this study also highlight the critical role of an organisation's constraints and control on monitoring in fostering employee acceptance of EPM practices, thereby mitigating the adverse effects of EPM invasiveness on employees' sense of control and subsequent perceptions of workplace isolation.

The remainder of Chapter 3 is organised as follows. Section 3.2 presents a literature review on management control changes in remote work setting, the COR theory, sense of control and workplace isolation. Section 3.3 discusses hypothesis development. Section 3.4 describes the research methods. Section 3.5 reports the measurement model. Section 3.6 discusses the results of hypothesis testing. Section 3.7 presents conclusions and outlines the limitations of this study.

### **3.2 Literature Review**

This literature review section first reviews research on the conservation of resources theory. Section 3.2.1 reviews prior literature on management control changes in remote work setting. Section 3.2.2 discusses literature on the sense of control. Section 3.2.3 provides a review of studies regarding workplace isolation. To review the literature on EPM invasiveness, refer to Section 2.3 and Section 2.4 in Chapter 2.

### **3.2.1 Management Control Changes and Remote Work**

Management control involves activities and practices designed to achieve organisational objectives (Bedford et al. 2016; Mouritsen et al. 2022). Van der Stede (2011) suggests that external crises often necessitate changes in management controls to accommodate shifts in work conditions. The COVID-19 pandemic, as a significant global crisis, influenced business operations and rapidly accelerated the transition from on-site to remote work (Parker 2020). This transition to remote work environments has introduced severe challenges to management controls, particularly concerning performance monitoring. Hafermalz (2020) suggests that remote work makes it difficult for organisations to directly observe employee actions and track team progress through control practices, such as face-to-face meetings and direct observation of performance. Due to limited monitoring capabilities in remote settings, Ho et al. (2023) further indicate that the performance indicators effective in on-site environments often fail to translate into valid incentive mechanisms in a remote context, leading to increased incentive problems.

To address challenges in remote work environments, organisations are increasingly turning to new technologies to adjust their management controls for employee monitoring. Delfino and van der Kolk (2021) conducted an interview study and found that professional service firms implemented daily video calls to monitor remote employees' activities, such as their online and offline statuses, in response to increased demands from supervisors and clients during the COVID-19 pandemic. These monitoring changes have led to a more restrictive control environment, eliciting increased work stress and reduced autonomy. Recognizing the sophisticated employee monitoring advanced by emerging technology, Delfino and van der Kolk (2021) emphasise that the effects of employees' responses to management control changes go

beyond stress. Despite the widespread adoption of ex ante controls in the remote work setting, their effect on remote employees is not well-understood (Bellesia et al. 2023; Kellogg et al. 2020). This necessitates further investigation into how technology-driven changes in management controls influence employees' attitudes and well-being in the remote work setting.

Recent literature in management control indicates that technological advancements enabled organisations to expand monitoring capabilities, shifting from merely assessing performance outcomes to also analysing employee input and skills data (e.g., Carlsson-Wall et al. 2023; Kellogg et al. 2020). This transition from ex post to ex ante performance monitoring and measurement suggests a significant change in management control driven by new technology. Although not investigated within a remote work context, previous research has looked into employees' responses to technology-based monitoring in the sports industry, a sector that adopted these practices earlier than most professional fields (Asgari et al., 2021). Baerg (2017) found that the use of camera tracking systems and wearable sensor devices in sports enables the collection of extensive data on athletes, both during and outside of competitions. His study indicates that athletes' reactions to this monitoring vary significantly; they may raise privacy concerns or embrace the monitoring as an opportunity for personal development, influenced by the extent of negotiation regarding data collection. Despite privacy concerns, Nappert and Bamber (2023) shows that athletes generally view these monitoring practices as valuable tools that enhance their performance. These tracking systems, combined with algorithmic data analysis, provide real-time insights into an athlete's physical and tactical activities, enabling coaches to customise training programs for performance improvement.

However, findings regarding athletes' responses to technology-based monitoring may not be generalised to employees in other professions, particularly those working remotely. Firstly, athletes are exposed to intense and invasive monitoring from an early age, leading to a tolerance and acceptance of such practices (Manley et al. 2012; Roderick 2006). In contrast, employees in other industries may not have the same level of familiarity or comfort with comprehensive monitoring. Compared with athletes, these employees are more likely perceive monitoring as more intrusive or stressful, leading to adverse impacts on their motivation and well-being. Secondly, in non-sport industries, the link between monitoring and improved performance may not be as clear and direct as in the sports industry. Athletes typically benefit from targeted suggestions based on monitored performance data, directly enhancing their performance. In contrast, remote employees in other industries may not always receive timely feedback, making it difficult to establish a clear relationship between monitoring and performance improvement (Bareket-Bojmel et al. 2023; Kniffin et al. 2020). Therefore, considering the widespread adoption of technology-based monitoring to track employee productivity and performance in remote work settings, this study investigates the impact of technology-driven management control, specifically EPM, on remote employees' attitudes and well-being.

### **3.2.2 The Conservation of Resources Theory**

The COR theory posits that individuals are motivated to protect their resources while simultaneously striving to acquire new resources to fulfil their needs (Halbesleben et al. 2014; Hobfoll 2011). In the workplace context, previous research identifies three basic needs that are essential for individual motivation and wellbeing: autonomy, relatedness and competence (Deci and Ryan 2000). When individuals experience a sense of ownership of their behaviours and psychological freedom

(autonomy)<sup>17</sup>, a sense of intimacy and connection with important others (relatedness), and a sense of mastery and effectiveness (competence), it places individuals in a position to have greater intrinsic motivation and experience higher levels of well-being. However, the failure to satisfy these needs can lead to negative impacts on employees' attitudes and wellbeing. In a meta-analysis reviewing the literature on the antecedents and consequences of basic need satisfaction, Van den Broeck et al. (2016) suggest that the failure to fulfil individuals' autonomy needs is linked to a sense of frustration, resulting in negative behavioural outcomes such as withdrawal from work interactions and reduced commitment to assigned tasks. When individuals' relatedness needs are not met, they experience feelings of isolation. The emotional distress linked to such isolation can result in engagement in counterproductive behaviours (Patterer et al. 2023). The unmet competence need is associated with decreased self-esteem and a reluctance to undertake challenging tasks.

To fulfil these needs, individuals acquire and protect related resources, including the physical (e.g., adequate workspace and useful devices), psychological (e.g., perceived control, sense of achievement), social (e.g., inclusive work culture and sufficient interactions) or organisational aspects of the job (e.g., clear job roles and necessary training) that are perceived as satisfying their needs at work (Brotheridge and Lee 2002; Halbesleben et al. 2014). Specifically, prior research suggests that interactions with colleagues and managers are vital resources for fulfilling employees' relatedness needs. A cross-sectional study on work interaction and relatedness indicates that engaging in work interactions with colleagues and supervisors not only enhances

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<sup>17</sup> Prior studies indicate that the desire for autonomy does not necessarily mean acting independently of others' desires; rather, it involves the capacity to make choices and decisions voluntarily, even if those choices align with others' preferences (Van den Broeck et al. 2016). For example, if a manager asks an employee to perform a task during a lunch break, and the employee willingly agrees, their autonomy needs are satisfied. On the contrary, if the employee wishes to take a lunch break but feels obligated to continue working, autonomy is compromised (Troughakos et al. 2013).

employees' work-role identities but also creates opportunities for emotional intimacy (Wright 2005). In line with these findings, Ozcelik and Barsade (2018) highlight the protective role of social interactions in increasing employee perceived support at work, satisfying need for relatedness, thereby shielding employees from feelings of isolation. To fulfil the need for autonomy, employees require resources, including the perceived ability to organise their work based on their schedule and to control their information and behaviour. Previous studies (e.g., Gagné and Deci 2005; Van den Broeck et al. 2016) have shown a strong relationship between perceived job control and an individual's sense of ownership over their behaviours, which satisfies the need for autonomy. In a study conducted by Kühnel et al. (2012), survey results indicate that employees who perceived strong control over how they accomplish tasks were more likely to experience psychological freedom at work, contributing to increased job engagement. Additionally, mentoring and career development programs are valuable resources to fulfil employees' needs for competence (Ryan and Deci 2000).

According to the COR theory, individuals' behaviours are influenced by the resources available to them. When resources are abundant, individuals tend to engage in facilitative behaviours to optimize their current environment and acquire more resources (Halbesleben et al. 2014). The expansion of resources fosters job enjoyment and helps individuals fulfil their job responsibilities more effectively, positively influencing employee motivation and well-being. For instance, in a longitudinal study conducted by Hakanen et al. (2011), employees experienced an expansion of work resources (i.e., fostering pride in the profession, expanding skill variety, and providing information about the effectiveness of performance) can better manage family-to-work conflict, contributing to increased levels of job satisfaction and work engagement. Conversely, during periods of resource loss, individuals prioritise avoiding further

losses and exhibit avoidant behaviours to preserve their limited resources (Halbesleben et al. 2014). As the loss of resources is perceived as a negative psychological state, it leads individuals to conserve their resources and refrain from additional resource investment. Halbesleben and Bowler (2007) find that employees with a resource conservation focus, characterised by minimizing losses, are more likely to limit the acceleration of engagement while undergoing accelerated accumulation of emotional exhaustion, resulting in depleted resources. Therefore, when individuals have fewer resources to fulfil their needs, resource conservation can inadvertently amplify the loss due to low resource accumulation, leading to negative impacts on employee motivation and wellbeing.

### **3.2.3 Sense of Control**

Sense of control refers to the degree to which individuals generally feel in control through their own actions, emphasizing perceptions of control rather than actual control (Lachman and Weaver 1998). In the workplace, Vander Elst et al. (2014) indicate that the sense of control involves employees' perceived ability to exercise control over job situations, including perceived control over work processes, schedules, and the methods to perform their tasks.

Sense of control is an essential resource for meeting employees' need for autonomy and adapting to changing working conditions. Kühnel et al. (2012) suggest that allowing employees to participate in decision-making related to their workflow, procedures, and schedules alleviates their feelings of being pushed around at work. This contributes to employees' perceived ability to organise their work based on their own schedules and preferences. Similarly, Wagner et al. (2003) find that when organisations communicate the work arrangement with employees and enable them to contribute to the decision-making process, employees perceive a strong sense of ownership of their

jobs and psychological freedom. Therefore, the sense of control plays a crucial role in enhancing feelings of ownership over one's behaviours and psychological freedom, making it a valuable resource for fulfilling the need for autonomy.

Previous research highlights the important role of the sense of control in motivating employees to have positive attitudes toward the organisation and to engage in behaviours aligned with organisational expectations. In a survey conducted by Liu et al. (2012) with employees from two telecommuting companies, employees who reported a high sense of control were more likely to perceive an inclusive work environment, establishing stronger connections with the organisation. A study by Leiter et al. (2009) involving employees in a printing press company also reveals that individuals with a strong sense of control demonstrated increased motivation and confidence when faced with challenging tasks and were more likely to engage in work discussions facilitating the completion of these tasks. Recent research by Ma et al. (2021) provides further evidence that employees perceiving sufficient control over their working environment and behaviours experience substantial freedom and flexibility, enhancing their task performance efficiency. However, when employees have a limited capacity to organise their work and low involvement in the decision-making process, they are prone to perceiving low control at work (Chen and Chiu 2009). This perception is associated with reduced job satisfaction (Avey et al. 2009), increased psychological stress (Pierce et al. 2001), and intensified sensitivity to losses (Li and Zhu 2019).

#### **3.2.4 Workplace Isolation**

Workplace isolation is defined as a state of mind or belief that one lacks sufficient interactions and support to fulfil the relatedness needs at work (Marshall et al. 2007). Essentially, the absence of social networks and interactions leads to employees lacking support at work, as interactions with others provide opportunities

for expressing needs and acquiring support. Jungert et al. (2018) identify that colleagues and supervisors serve as valuable contacts for employees, allowing them to establish relatedness at work, acquire important contextual information about work events, and gain feedback and a deeper understanding of complex work-related matters. When employees perceive limited interactions and support from these significant contacts, workplace isolation becomes more pronounced.

Previous studies suggest that workplace isolation has negative impacts on employee performance. Bartel et al. (2012) conducted a field study and found that employees experiencing workplace isolation have reduced organisational identification and were more likely to encounter disruptions in performing daily routines and completing tasks. Those employees tend to take frequent corrective actions due to disruptions at work, leading to impaired confidence in their abilities and placing them at a disadvantage in performing their jobs. In a survey conducted by Golden et al. (2008), consistent evidence is provided that employees reporting feelings of isolation have difficulties in determining how they should engage in work events and perform better because they lack peers with whom they can compare themselves. This experience has negative impacts on employee performance and can lead to diminished psychological or even physical health (DeWall and Baumeister 2006; Hitlan et al. 2006).

Prior literature highlights workplace isolation as a significant concern for employees in remote work environments. According to Kniffin et al. (2020), both physical and social distance in remote work reduces organisational support and poses challenges for employees in maintaining connections within their organisation. The decreased opportunities for face-to-face interactions also impair remote employees' ability to receive essential guidance and feedback from their colleagues and supervisors. As remote employees often rely on static and siloed collaboration networks for

communication, which contain fewer cues and contextual information (Sardeshmukh et al. 2012), the increased dependence on virtual communication is likely to reduce opportunities for social networks and interactions with colleagues and supervisors (Bareket-Bojmel et al. 2023). Furthermore, Thatcher and Zhu (2006) point out that social distancing in remote work reduces the availability of organisational referents for identity formation and social support, leading to decreased employee job engagement. Consequently, remote employees experience reduced interaction with and support at work, resulting in pronounced workplace isolation.

### **3.3 Hypothesis Development**

This study develops eight hypotheses to examine the relationships between EPM ST, EPM CC, employees' sense of control and perceived workplace isolation.

#### **3.3.1 EPM ST and Workplace Isolation**

The COR theory posits that work interactions are important resources for satisfying employees' perceived relatedness needs (Ozcelik and Barsade 2018; Wright 2005). In the context of high EPM ST, which involves the use of a greater number of real-time monitoring techniques to capture detailed information about employee behaviours, this increased scrutiny is likely to extend to employee interactions at work. Amick and Smith (1992) indicate that monitoring is often perceived as being accompanied by work norms to assess employee behaviours at work. Given continuous monitoring, employees are likely to be concerned about the potential restrictions on work interaction under EPM, resulting in a decreased willingness to engage in interaction with their colleagues and supervisors. In such an environment, employees may withdraw from workplace interactions due to perceived pressure and stress associated with continuous monitoring.

Moreover, high EPM ST reduces the necessity for managers to initiate interactions with employees to obtain necessary performance information since EPM serves as a valuable source providing such information (Aiello and Kolb 1995). According to COR theory, a deficiency in resources, work interaction, to fulfil the needs of relatedness can lead to feelings of isolation. Since EPM ST is likely to reduce interactions initiated by both employees and managers in the workplace, it may lead to reduced work interaction to satisfy relatedness needs, thereby exacerbating employees' workplace isolation.

Therefore, this study predicts that EPM ST will amplify employees' sense of isolation in the workplace. This study formulates the following associated hypothesis:

*H1: EPM ST is positively associated with employee perceptions of workplace isolation.*

### **3.3.2 EPM ST and Employees' Sense of Control**

High EPM ST can threaten employees' sense of control, which is a crucial resource for meeting autonomy needs. First, high EPM ST represents that organisations use various monitoring techniques to automatically collect employee information. Laird et al. (2018) indicate that EPM provides data-driven insights into employee productivity and work processes. This detailed data collected by EPM, such as how employees allocate time and effort to performing tasks, facilitates managers in rectifying inefficiencies and making better adjustments to task allocation and workflow (Levchenko et al. 2011). These adjustments are likely to disrupt employee workflow and task allocation, leading to employees' perception that work processes and things that happen at work are beyond their control. Second, the collected data enables organisations to conduct in-depth analyses, predicting employees' thoughts, feelings, and even health conditions and private behaviour. Gagné and Bhave (2011) suggest that

as organisations accumulate comprehensive data through EPM, employees perceive increased scrutiny in both their work and personal lives. The increased ability of organisations to collect and analyse employee data is likely to amplify employees' uncertainty about how they are perceived and evaluated by the organisation (Singh et al. 2020). This may result in employees' sense of helplessness regarding the implications of monitoring and diminish their perceived control at work.

Moreover, as employees become aware of continuous monitoring, they tend to invest extra effort and attention to ensure monitoring techniques accurately capture their performance and dedication while safeguarding personal information. For instance, Trevor and Holweg (2022) indicate that monitoring tools, such as capturing screenshots and keystroke logging, can distract employees' attention and lead to more effort being directed towards specific behaviours that can be captured by monitoring, such as maintaining continuous log-on time and focusing on the number and frequency of keystrokes. This is likely to increase employees' perceptions that their work processes are determined by EPM rather than by their own choices. In addition, the programmed nature of EPM may restrict its ability to apply personalized or humanized adjustments to diverse circumstances and employees' needs (Alder et al. 2008; Zweig and Webster 2002). For example, recent literature indicates that email monitoring standardizes employees' use of email (Ninaus et al. 2021). This can decrease employees' perceived control over how they communicate and engage at work.

Based on the above discussion, employees under more invasive EPM (i.e., EPM ST) tend to have a lower sense of control. This study formalises the second hypothesis as follows:

*H2: EPM ST is negatively associated with employees' sense of control.*

### 3.3.3 The Mediating Role of Sense of Control

According to COR theory, individuals tend to conserve their resources and refrain from further resource investment when they experience resource depletion (Halbesleben et al. 2014). Since a sense of control is a crucial resource for fulfilling employees' need for relatedness (Kühnel et al. 2012; Wagner et al. 2003), individuals perceiving a lower sense of control are inclined to prioritize resource conservation over investment. Previous research (Bolino and Turnley 2005) indicates that engaging in activities to gain insight into their roles and expectations at work represents a resource investment for employees. Individual interactions with colleagues and supervisors are essential activities for employees, enhancing communication, clarifying job requirements, and promoting a shared understanding among team members (Luria et al. 2009). However, involving in these interactions requires the expenditure of time and energy to convey and exchange thoughts, ideas, and feelings with others. Given continuous monitoring by EPM, employees may fear that, during interactions, their thoughts, feelings, and actions are further being captured by EPM, reducing their perceived control over their information and behaviours. As a result, employees may conserve resources and hesitate to engage in formal or informal interactions at work out of fear of being monitored, leading to potential further resource depletion.

Therefore, employees who wish to conserve their sense of control at work may be concerned that interaction with supervisors and colleagues can lead to further resource loss and bring more work and monitoring. This reduced willingness to engage in interaction may result in fewer resources to fulfil relatedness needs, thereby exacerbating workplace isolation. This study states the third hypothesis as follows:

*H3: Employees' sense of control is negatively associated with employees' perception of workplace isolation.*

This study juxtaposes H1–H3 to propose a mediating role of sense of control. This study expects that an employee’s sense of control mediates the effects of EPM ST to workplace isolation. Specifically, the study hypothesises as follows:

*H4: The relationship between EPM ST and employees’ perceptions of workplace isolation is mediated by employees’ sense of control.*

### **3.3.4 The Mediating Role of EPM CC**

Based on the discussion from Section 2.4.5, EPM CC refers to organisational constraints and control on monitoring, involving explicit limits imposed on EPM use and the influence of employees over the design and use of EPM. Previous studies indicate that implementing constraints on EPM and allowing employees to influence the design and use of EPM can alleviate employees' concerns about monitoring. For example, Alge (2001) shows that constraints on monitoring practices better defines the purpose of monitoring, enhancing employees’ belief and confidence that their data will not be used for unjustified and unacceptable reasons. In addition, McNall and Stanton (2011) suggest that giving employees the ability to deactivate monitoring during non-working hours or in situations requiring privacy can lead to a perception of EPM as fairer, reducing employees' negative responses to monitoring. Based on prior research, this study posits that organisations employing a wider range of monitoring practices and collecting more personal intimate information from employees (i.e., high EPM ST) have a greater demand for EPM CC. Therefore, this study predicts that EPM CC will increase as organisations increase EPM ST and hypothesises as follows:

*H5: EPM ST is positively associated with EPM CC.*

Prior literature suggests that organisational constraints on monitoring help clarify the boundaries of data collection and access to the use of monitoring data for employee performance evaluation (Alge 2001; Wells et al. 2007). These constraints are

likely to enhance employees' perceived control over work processes under invasive EPM. Moreover, allowing employees to influence the design and use of monitoring enables them to negotiate with organisations to achieve agreements regarding monitoring (Alder et al. 2007; McNall and Stanton 2011). This involvement provides employees with opportunities to exert control over EPM, enabling them to determine when monitoring can occur, what information can be collected, and which actions can be monitored at work. This perspective aligns with research on employee participation and voice (e.g., Lind and Tyler 1988; Milliken et al. 2015), highlighting that involving employee in decision-making activities increases their perceived control at work. Collectively, this study predicts that EPM CC, consisting of organisational constraints and control on EPM, will enhance employees' sense of control at work. This study hypothesizes as follows:

*H6: EPM CC is positively associated with employees' sense of control.*

This study juxtaposes H2, H5 and H6 and predicts a negative mediating effect for EPM CC. Specifically, this study predicts that EPM CC will suppress the negative relationship between EPM ST and employees' sense of control, indicating a suppression effect as outlined by MacKinnon et al. (2000) and Tzelgov and Henik (1991).<sup>18</sup> Organisations with higher EPM ST are more likely to implement EPM CC to address employees' concerns regarding EPM ST. Consequently, EPM CC is expected to mitigate the adverse effects of EPM ST on employees' sense of control at work. This hypothesis can be formulated as follows:

*H7: The relationship between EPM ST and employees' sense of control is negatively mediated by EPM CC.*

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<sup>18</sup> According to Tzelgov and Henik (1991) and MacKinnon et al. (2000), in a mediation model, a suppression effect is present when the direct effects of an independent variable on a dependent variable is negatively mediated by the mediator.

This study juxtaposes H4 and H7 and predicts mediating effects for EPM CC and sense of control. High EPM ST can increase the use of EPM CC, which can enhance employees' perceptions of sense of control, leading to reduced feelings of workplace isolation. This study expects that EPM CC and employees' sense of control will mediate the relationship between EPM ST and employees' perceived workplace isolation, hypothesised as follows:

*H8: The indirect relationship between EPM ST and employees' perception of workplace isolation is mediated by the level of EPM CC and employees' sense of control.*

### **3.4 Research Method**

This study uses data collected from an online survey to test all hypotheses. To mitigate the potential demand effect in the survey,<sup>19</sup> the study prioritises questions on the dependent variable to reduce any potential bias arising from participants' awareness of the study's hypotheses or desired outcomes.

In this study, the independent variables include the participant's perception of the invasive use of EPM (i.e., EPM ST), their organisations' constraints and control on EPM (i.e. EPM CC), and their sense of control at work. The dependent variable is the participant's perceived workplace isolation. There are eight control variables: age, gender, highest education degree, job level, tenure, remote work experience, personality and industry of the organisation.

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<sup>19</sup> Prior research (e.g., Mummolo and Peterson 2019) indicates that demand effects involve bias occurring when participants infer the purpose of a survey and change their behaviours or responses based on what they think the research is about.

### 3.4.1 Respondents and Procedure

COVID-19 accelerated the adoption of new monitoring technologies in the remote work environment, which has resulted in a de facto global experiment of EPM and remote working (Kniffin et al. 2020). Building on this background, this study conducted an online survey from January to March 2022. The beginning of the survey questionnaire briefly outlined the purpose and goals of the survey, conditions of participation and the withdrawal process, and provides assurance of anonymity regarding responses. The participating employees were recruited via Prolific. Consistent with the validation survey discussed in Chapter 2 (see Section 2.6.2), the main survey employed a longitudinal approach, consisting of a participant screening survey and a formal survey. Participation was voluntary, and those who agreed to participate and successfully submitted their responses in the participant screening survey received £0.13 (approximately USD 0.15) as monetary remuneration for an average 1-minute survey. Participants who passed the participant screening survey and successfully submitted responses in the formal survey received £4.00 (approximately USD 4.75) as monetary remuneration for an average 20-minute survey (equivalent to an hourly rate of £16.18; approximately USD 19.22). The same criteria used in the validation survey were applied to screen participants in this survey.<sup>20</sup> Detailed questions in the participant screening survey are reported in Appendix A.

Initially, Prolific sent invitation letters to 1,480 online panel members residing in the US. These letters contained information about the study's purpose and a brief online survey questionnaire that included screening questions based on the sample

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<sup>20</sup> The main survey applied the same participant selection criteria as the validation survey to screen participants: (1) the respondent's organisation must be located in the US and have a minimum of 100 employees; (2) respondents must have at least 3 months of cumulative remote-working experience in the preceding 24 months with their current organisation; (3) respondents must be aware that their organisation monitors employees' activities and performance through EPM.

selection criteria. Among the 1,460 responses received, 724 passed the screening questions. In the second phase, Prolific distributed the formal (main) survey instrument to these 724 respondents. The survey did not permit respondents to save and continue later. This phase yielded 496 fully completed responses. Upon examining respondent identification (ID) numbers and internet protocol addresses, no duplications were found. Exclusions were made for two respondents who failed attention check questions, ten who had less than 3 months of remote work experience, one who reported extreme remote work experience of 240 months with a young age (i.e. 32), and three who stated that their organisation did not use any monitoring techniques listed in the checklist. The final sample consists of 480 respondents, representing a usable rate of 96.77%. Detailed questions in the main survey are in Appendix C.

### **3.4.2 Demographics of Participants**

Table 3.1 provides demographic information about the final sample for hypothesis testing. On average, respondents had been employed with their current organisation for 5.909 years, with remote work experience of 18.270 months (approximately 1.5 years). This indicates a reasonable degree of familiarity with remote work arrangements among the respondents, which may be valuable for understanding their attitudes and perceptions regarding organisational practices in the remote work context. The respondents on average were 37.371 years old, with 47.08% identifying as female. Further, 61.46% of the respondents' job level was below managerial level.

The respondents were widely spread over various industries. Their organisations were primarily from the information technology (16.66%), finance and insurance (14.38%), health care and social assistance (10.21%) and education (8.33%) sectors. This distribution aligns with the findings of a US Census Bureau's Household Pulse Survey (US Census Bureau 2023), which indicates that these four industries in

the US had a higher rate of transition to remote work during the COVID-19 pandemic. This can be attributed to the nature of jobs in these industries, which often involve tasks that can be performed remotely using technology such as computers, smartphones and the internet. Moreover, these industries had already embraced some form of remote work or flexible work arrangements prior to the pandemic.

In terms of educational background, the majority of respondents (56.67%) held a bachelor degree, and 26.25% had obtained a master degree or higher. These results indicate that the respondents were generally well educated, which may suggest that they had the skills and qualifications needed to effectively navigate the challenges associated with remote work. The descriptive statistics for the validation (see Section 2.6.2) and main survey samples used in this study are comparable.

**Table 3.1: Demographic information, job level and type of industry**

<i>Panel A: Demographic information on respondents and organisations</i>				
	Mean	Standard deviation	Minimum	Maximum
Tenure in organisation (years)	5.909	5.667	0.25	33
Remotely working time in organisation (months)	18.270	7.307	3	48
Age (years)	37.371	10.942	18	71
	Number	Percentage		
Gender:				
Male	254	52.92%		
Female	226	47.08%		
Total	480			
	Number	Percentage		
Manager:				
Job level is below manager	295	61.46%		
Job level is or above the manager	185	38.54%		
<i>Panel B: Type of industry</i>				
	Number	Percentage		
Agriculture, Forestry, Fishing and Hunting	3	0.63%		
Arts, Entertainment and Recreation	13	2.71%		
Broadcasting	3	0.63%		

Computer and Electronics Manufacturing	5	1.04%
Construction	8	1.67%
Education	40	8.33%
Finance and Insurance	69	14.38%
Government and Public Administration	28	5.83%
Health Care and Social Assistance	49	10.21%
Hotel and Food Services	7	1.46%
Information technology	80	16.66%
Legal Services	7	1.46%
Military	1	0.21%
Publishing	5	1.04%
Real Estate, Rental and Leasing	5	1.04%
Retail	21	4.38%
Scientific or Technical Services	33	6.88%
Software	25	5.21%
Telecommunications	16	3.33%
Transportation and Warehousing	11	2.29%
Utilities	8	1.67%
Wholesale	3	0.63%
Other Manufacturing	23	4.79%
Other Industry	17	3.54%

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*Panel C: Education background*

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	Number	Percentage
High school or equivalent	8	1.67%
Graduate diploma	74	15.42%
Bachelor degree	272	56.67%
Master or higher degree	126	26.25%

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### 3.4.3 Variable Measurement

Based on the discussion in Chapter 2 regarding the conceptualisation (see Section 2.4.5) and measurement development for EPM ST and EPM CC (refer to Section 2.5.2.3), both EPM ST and EPM CC are formative constructs. Following the approach outlined by Diamantopoulos and Winklhofer (2001), this study utilises a composite index to measure EPM ST and EPM CC.

#### 3.4.3.1 Measuring EPM ST

EPM ST represents the invasive use of EPM, consisting of EPM scope and EPM target. The wider scope and personal-target nature of EPM suggests a higher level of EPM invasiveness (Ravid et al. 2023). EPM scope (*SCOPE*) is measured by a 17-item checklist of frequently used EPM techniques and calculated as the number of techniques that organisations implemented during the remote work period. EPM target (*TARGET*) is comprised of three items on a 7-point Likert-type scale to capture the following: (1) individual thoughts, feelings and physiology; (2) body or location; and (3) tasks or task behaviour.

As EPM ST is a second-order formative construct, the estimates of measurement items represent multiple regression weights as opposed to component loadings for the reflective case (Petter et al. 2007). This study follows the literature (Hair et al. 2010; Götz et al. 2009) to measure EPM ST using a composite index based on the weights of measurement items. This involves two steps. First, this study calculates the composite scores for the first-order constructs, *SCOPE* and *TARGET*, by utilising weights obtained from a PLS regression<sup>21</sup> and applying them to the associated

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<sup>21</sup> Following Chong and Wang (2019), this study employs WarpPLS Version 7.0 software package (Kock 2020) to obtain the weights for each item.

measurement items. Second, the study calculates the composite score for EPM ST by aggregating the two first-order constructs through a weighted sum approach, with the weights determined via PLS regression analysis.

### **3.4.3.2 Measuring EPM CC**

EPM CC refers to the extent to which an organisation's constraints and control on monitoring, consisting of EPM constraints (*CONSTRAINTS*) and EPM control (*CONTROL*). Greater constraints and controls on EPM suggest that the organisation has implemented stronger constraints and control to limit the invasiveness of EPM (Alge 2001; McNall and Stanton 2011). *CONSTRAINTS* is measured using four items on a 7-point Likert-type scale that assesses the extent to which an organisation has explicit policies on the use of EPM (e.g., when and how EPM can occur) and the handling of collected data (e.g., how data will be used and who will have access to the EPM data). *CONTROL* is measured using two items that ask participants to rate on a 7-point Likert-type scale the extent to which they had influence over the design and use of EPM practices in their organisation.

EPM CC is a second-order formative–formative construct. Following a similar approach as that for measuring EPM ST, this study measures EPM CC using a composite index determined based on the weights of its measurement items. The composite scores for the first-order constructs, *CONSTRAINTS* and *CONTROL*, are calculated using their PLS regression-derived weights applied to their measurement items. Subsequently, the study computes a composite score for EPM CC by aggregating the two first-order constructs through a weighted sum method, employing weights obtained via PLS regression analysis.

### **3.4.3.3 Measuring Workplace Isolation**

Workplace isolation (*WI*) represents a lack of sufficient interactions and supports to fulfil an individual's inherent desire to feel relatedness at work (Marshall et al. 2007). *WI* is assessed using a 7-item instrument developed and validated by Golden et al. (2008). This measure was developed to measure employees' perception of isolation at work, particularly in the remote work context. Prior recent research (e.g., Lyons et al. 2023; Peng et al. 2022) has demonstrated this scale to have good psychometric properties.

Participants were asked to rate their feelings during the period of working remotely to evaluate their workplace isolation. The seven items were (1) 'I feel left out on activities and meetings that could enhance my career', (2) 'I miss out on opportunities to be mentored', (3) 'I miss the emotional support of coworkers', (4) 'I feel out of the loop', (5) 'I miss face-to-face contact with coworkers', (6) 'I feel isolated' and (7) 'I miss informal interaction with others'. Each item is measured using a 5-point Likert-type scale ranging from 1, 'never' to 5, 'always'.

### **3.4.3.4 Measuring Sense of Control**

Sense of control (*SOC*) measures the degree to which employees generally feel in control of their information, behaviours and arrangements (Lachman and Weaver 1998). *SOC* is measured using eight items from the reverse-scored perceived constraints scale developed and validated by Lachman and Weaver (1998) and modified by Philippaers et al. (2019) to suit the work situation and measure employees' perceived control at work. This study adapts this scale to fit the remote work context by adding a time condition (i.e., when I work remotely) to each item.

The items are as follows: When I work remotely, (1) ‘Other people determine most of what I can and cannot do at work’, (2) ‘There is little I can do to change many of the important things at my work’, (3) ‘I often feel helpless in dealing with the problems at my work’, (4) ‘What happens to me at work is often beyond my control’, (5) ‘There are many things that interfere with what I want to do at work’, (6) ‘I have little control over the things that happen to me at work’, (7) ‘There is really no way I can solve all the problems I have at work’ and (8) ‘I sometimes feel I am being pushed around at work’. Each item is assessed using a 7-point Likert-type scale, ranging from 1, indicating ‘strongly disagree,’ to 7, indicating ‘strongly agree.’ Higher reversed scores indicate a greater sense of control at work.

#### **3.4.3.5 Measuring Control Variables**

Prior studies suggest that individuals’ demographic and psychological differences, as well as organisation-related factors, may influence their response to remote work and monitoring (e.g., Feldman and Gainey 1997). To mitigate the potential impact of individual differences and work-related factors on the relationships under examination, the models control for several variables. These include demographics such as gender, age and education, as well as personality traits. Further, work-related variables including tenure, job level within the organisation, remote work experience and the industry in which employees work, are controlled for in the models.

Gender (*GENDER*) is an indicator variable set at 1 if a participant is male and 0 if female. Age (*AGE*) captures the age of respondents, measured as the numeric value in years. Education level (*HIDG*) is a variable representing the highest education level of the participant and is coded with a value of 4 for a master degree or higher, 3 for a bachelor degree, 2 for a graduate diploma and 1 for a high school degree or equivalent.

Previous research indicates that individuals' personality traits influence their ability to work independently and their response (e.g., sense of ownership, feelings of isolation and job performance) to monitoring in the remote work context (Ahmadi et al. 2000; Lomo-David and Griffin 2001). This study controls for the effect of personality traits on the examined relationship. Personality is measured using an 11-item Big Five Inventory (BFI-11), adapted from Rammstedt and John (2007). Rammstedt and John (2007) created an abbreviated 11-item version (BFI-10) of the 44-item Big Five Inventory developed by John and Srivastava (1999). The five personality traits are extraversion (*P\_EXTRA*), agreeableness (*P\_AGREE*), conscientiousness (*P\_CONSCI*), neuroticism (*P\_NEURO*) and openness (*P\_OPEN*). *P\_EXTRA* is measured with two items; for example, 'I see myself as someone who is outgoing, sociable'. *P\_AGREE* is assessed with three items; for example, 'I see myself as someone who is generally trusting'. *P\_CONSCI* is measured with two items, including 'I see myself as someone who does a thorough job'. *P\_NEURO* is assessed with two items; for example, 'I see myself as someone who gets nervous easily'. Finally, *P\_OPEN* is measured by two items, for example, 'I see myself as someone who has an active imagination'. Each item is scored on a 5-point agreement rating scale ranging from 1, 'strongly disagree' to 5, 'strongly agree'.

Prior studies suggest that managers in organisations generally have a better understanding of the purpose and functioning of monitoring practices in relation to employees (Litzky et al. 2006) The job position of an individual, particularly as a manager, can influence their perception of monitoring. To control for the potential impact of job position on the results, job level (*JOB\_LEVEL*) is included as a control variable in the model. *JOB\_LEVEL* is assigned a value of 1 if the participant holds a managerial position or above in the organisation and 0 if they do not. Additionally,

tenure (*TENURE*) refers to the work experience of a participant in their organisation and is measured in number of years. Remote work experience (*REMOTE*) measures the cumulative number of months that employees have worked remotely.

By accounting for the impact of industry-related factors, such as differences in technological innovations, regulation and competition, this study controls for industry-fixed effects in the model. Controlling industry-fixed effects can also help to ensure that the results are more generalisable across industries. In the survey, participants were asked to indicate the industry that best described the organisation they were working for. The industries listed as options were agriculture, forestry, fishing and hunting, arts, entertainment and recreation, broadcasting, computer and electronics manufacturing, construction, education, finance and insurance, government and public administration, health care and social assistance, hotel and food services, information, legal services, military, mining, publishing, real estate, rental and leasing, retail, scientific or technical services software, telecommunications, transportation and warehousing, utilities, wholesale, other manufacturing and other industry.

### **3.5 Assessment of the Structural Model and Results**

The measurement (conceptual) model is comprised of two second-order formative constructs (i.e., EPM ST and EPM CC), along with two reflective constructs, *SOC* and *WI*. The following variables are controlled in the models: (1) gender; (2) age; (3) tenure; (4) remote work experience; (5) education; (6) job level in the organisation; (7) personality and an organisation-related variable (8): the industry of the organisation in which the employee was working.

Table 3.2 provides descriptive statistics for the final sample, presenting the range and standard deviation of each variable within the model. Table 3.3 presents the Spearman correlation matrix, showing the relationships between variables in the model.

**Table 3.2: Descriptive statistics**

<i>VARIABLE</i>	N	Mean	SD	Min	Max	P25	Median	P75
<i>EPM_ST</i>	480	4.274	1.468	1.371	9.306	3.153	4.154	5.202
<i>EPM_CC</i>	480	4.340	1.839	1.450	10.150	2.903	4.165	5.651
<i>WI</i>	480	2.407	0.895	1.000	5.000	1.714	2.429	3.000
<i>SOC</i>	480	4.469	1.497	1.000	7.000	3.250	4.500	5.625
Gender	480	0.471	0.500	0.000	1.000	0.000	0.000	1.000
Age	480	37.371	10.942	18.000	71.000	29.000	36.000	44.000
Highest degree	480	2.142	0.681	1.000	4.000	2.000	2.000	3.000
Job level	480	0.385	0.487	0.000	1.000	0.000	0.000	1.000
Tenure	480	5.909	5.667	0.000	33.000	2.000	4.000	8.000
Remote month	480	18.270	7.307	3.000	48.000	12.000	22.000	24.000
Personality ( <i>P_EXTRA</i> )	480	2.757	1.099	1.000	5.000	2.000	2.500	3.500
Personality ( <i>P_AGREE</i> )	480	3.722	0.751	1.000	5.000	3.333	4.000	4.333
Personality ( <i>P_CONSCI</i> )	480	3.947	0.810	1.000	5.000	3.500	4.000	4.500
Personality ( <i>P_NEURO</i> )	480	2.801	1.079	1.000	5.000	2.000	2.500	3.500
Personality ( <i>P_OPEN</i> )	480	3.767	0.901	1.000	5.000	3.000	4.000	4.500

*Note:* *EPM\_ST* refers to the invasive use of EPM. *EPM\_CC* refers to the organisation's constraints and control on EPM use. Personality is measured in five dimensions, including extraversion (*P\_EXTRA*), agreeableness (*P\_AGREE*), conscientiousness (*P\_CONSCI*), neuroticism (*P\_NEURO*), and openness (*P\_OPEN*). *WI* refers to an employee's perceived workplace isolation. *SOC* indicates an employee's sense of control at work. *Gender* is set at 1 if an employee is a male and 0 if she is a female. *Age* refers to the age of respondents, measured as the numeric value in years. *Job level* is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. *Tenure* refers to the work experience of an employee. *Highest degree* captures the highest education level of an employee and takes a value of 3 if an employee's highest degree is a master or higher degree; a value of 2 if an employee's highest degree is a bachelor degree; a value of 1 if an employee's highest degree is a graduate diploma; and a value of 0 if the highest degree of an employee is a high school degree or equivalent. This study computes a composite score based on the average of all items for each construct. Remote month refers to the cumulative number of months that employees worked remotely in the preceding 24 months.

**Table 3.3: The Spearman correlation matrix**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) <i>EPM_ST</i>	(0.871)														
(2) <i>EPM_CC</i>	0.262**	(0.761)													
(3) <i>WI</i>	0.100*	-0.039	(0.783)												
(4) <i>SOC</i>	-0.158**	0.213**	-0.196**	(0.808)											
(5) <i>Gender</i>	0.064	0.151**	0.001	0.087	N/A										
(6) <i>Age</i>	-0.097*	-0.032	-0.041	0.113*	-0.023	N/A									
(7) <i>Highest degree</i>	-0.073	-0.171**	0.038	0.007	-0.020	0.114*	N/A								
(8) <i>Job level</i>	0.142**	0.184**	0.065	0.213**	0.145**	0.182**	0.183**	N/A							
(9) <i>Tenure</i>	0.016	0.101*	-0.060	0.168**	0.146**	0.453**	0.065	0.354**	N/A						
(10) <i>Remote month</i>	-0.123**	0.001	-0.136**	0.061	-0.076	0.215**	0.020	0.008	0.416**	N/A					
(11) <i>P_EXTRA</i>	0.046	0.042	0.126**	0.177**	0.079	0.091*	0.103*	0.226**	0.116*	0.015	(0.905)				
(12) <i>P_AGREE</i>	0.059	0.143**	0.006	0.253**	0.053	0.065	0.037	0.169**	0.054	-0.087	0.259**	(0.757)			
(13) <i>P_CONSCI</i>	0.117*	0.130**	-0.005	0.208**	0.018	0.212**	0.101*	0.222**	0.178**	0.050	0.177**	0.279**	(0.864)		
(14) <i>P_NEURO</i>	-0.079	-0.182**	0.073	-0.289**	-0.276**	-0.268**	-0.086	-0.347**	-0.287**	-0.023	-0.320**	-0.380**	-0.316**	(0.900)	
(15) <i>P_OPEN</i>	-0.043	0.022	0.017	-0.003	-0.115*	0.054	-0.014	0.049	-0.005	-0.012	0.159**	0.029	0.056	-0.013	(0.828)

*Note:* *EPM\_ST* refers to the invasive use of EPM. *EPM\_CC* refers to the organisation's constraints and control on EPM. Personality is measured in five dimensions: extraversion (*P\_EXTRA*), agreeableness (*P\_AGREE*), conscientiousness (*P\_CONSCI*), neuroticism (*P\_NEURO*) and openness (*P\_OPEN*). *WI* refers to an employee's perceived workplace isolation. *SOC* indicates an employee's sense of control at work. *Gender* is set at 1 if an employee is a male and 0 if she is a female. *Age* refers to the age of respondents, measured as the numeric value in years. *Job level* is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. *Tenure* refers to the work experience of an employee. *Highest degree* captures the highest education level of an employee and takes a value of 3 if an employee's highest degree is a master or higher degree; a value of 2 if an employee's highest degree is a bachelor degree; a value of 1 if an employee's highest degree is a graduate diploma; and a value of 0 if the highest degree of an employee is a high school degree or equivalent. This study computes a composite score based on the average of all items for each construct. Remote month refers to the cumulative number of months that employees worked remotely in the preceding 24 months. Square roots of AVEs are reported in parentheses as shown diagonally. \*, \*\*, \*\*\* represent two-tailed statistical significance of correlation at the 0.10, 0.05 and 0.01 levels, respectively.

### 3.5.1 Assessment of the Structural Model

To assess the structural model, this study conducts a second-order CFA on the EPM ST and EPM CC scales using the main survey sample. The results are presented in Table 3.4. All items in both the EPM ST and EPM CC scales have factor loadings exceeding 0.50 with their respective constructs, and their composite reliabilities are greater than 0.60. The AVE for both scales exceeds 0.50, indicating satisfactory convergent validity<sup>22</sup> (Chin 1998).

Results presented in Table 3.4 demonstrate that all items for *WI* loaded above the 0.7 level on the first factor, explaining 70.4% of the total variance. The Cronbach's alpha, with a value of 0.894, indicates high internal reliability of the scale (Nunnally 1978). Similarly, for the *SOC* scale, eight items loaded above 0.6 on the first factor, explaining 60.9% of the total variance. The Cronbach's alpha coefficient, at 0.922, was well above the recommended 0.70 level (Nunnally 1978), indicating high internal reliability for the scale. These findings strongly support the reliability and convergent validity of the model.

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<sup>22</sup> The second-order CFA results indicate that EPM CC has a relatively low Cronbach's alpha. Previous studies emphasise that high Cronbach's alpha values are not a necessary requirement for formative constructs (Rai et al. 2006; Jarvis et al. 2003).

**Table 3.4: Second-order confirmatory factor analysis—Combined factor loadings, composite reliability, Cronbach’s alpha and average variance extracted**

	Combined factor loading	Composite reliability	Cronbach’s alpha	Average variances extracted
EPM ST ( <i>EPM_ST</i> )		0.862	0.681	0.758
<i>SCOPE</i>	0.871			
<i>TARGET</i>	0.871			
EPM CC ( <i>EPM_CC</i> )		0.733	0.272	0.579
<i>CONSTRAINTS</i>	0.761			
<i>CONTROL</i>	0.761			
Sense of control ( <i>SOC</i> )		0.937	0.922	0.652
<i>SOC1</i>	0.609			
<i>SOC2</i>	0.779			
<i>SOC3</i>	0.859			
<i>SOC4</i>	0.874			
<i>SOC5</i>	0.827			
<i>SOC6</i>	0.898			
<i>SOC7</i>	0.836			
<i>SOC8</i>	0.742			
Workplace isolation ( <i>WI</i> )		0.917	0.894	0.613
<i>WI1</i>	0.704			
<i>WI2</i>	0.749			
<i>WI3</i>	0.814			
<i>WI4</i>	0.799			
<i>WI5</i>	0.808			
<i>WI6</i>	0.782			
<i>WI7</i>	0.819			
Personality:				
Extraversion ( <i>P_EXTRA</i> )		0.901	0.780	0.820
<i>P_EXTRA1</i>	0.905			
<i>P_EXTRA2</i>	0.905			
Agreeableness ( <i>P_AGREE</i> )		0.801	0.628	0.574
<i>P_AGREE1</i>	0.740			
<i>P_AGREE2</i>	0.777			
<i>P_AGREE3</i>	0.755			
Conscientiousness ( <i>P_CONSCI</i> )		0.854	0.659	0.746
<i>P_CONSCII</i>	0.864			

<i>P_CONSCI2</i>	0.864			
Neuroticism ( <i>P_NEURO</i> )		0.895	0.766	0.810
<i>P_NEURO1</i>	0.900			
<i>P_NEURO2</i>	0.900			
Openness ( <i>P_OPEN</i> )		0.813	0.541	0.685
<i>P_OPEN1</i>	0.828			
<i>P_OPEN2</i>	0.828			

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*Note:* AVE refers to average variance extracted. VIF refers to item's variance inflation factor. The VIF for each item is below 4.5, acceptable if under 5.

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Further, this study uses the HTMT ratio and Fornell–Larcker criterion to assess the discriminant validity of the measurement model. Henseler et al. (2015) suggest that the HTMT ratio should be below 0.90. According to the Fornell–Larcker criterion, the square root of the AVE of each construct should exceed its inter-construct correlation in the model (Fornell and Larcker 1981). This study estimates the structural model with the PLS-SEM algorithm using a nonparametric bootstrapping routine with 5,000 samples. Results shown in Panel A of Table 3.5 indicate that the HTMT values are below 0.90 for all variables, meeting the HTMT ratio requirement. Results in Panel B of Table 3.5 show that the square root of AVE of each construct is greater than its correlation with other variables in the model, satisfying the Fornell–Larcker criterion. Collectively, these findings indicate acceptable discriminant validity of the model.

To examine multicollinearity in the structural model, this study evaluates VIF, with values lower than 5 indicating an acceptable measurement model for the constructs (Chong and Wang 2019; Hair et al. 2010). As indicated in the note to Table 3.5, the VIFs for all constructs are below 2, which is lower than the common cut-off threshold of 5. These results suggest an acceptable level of multicollinearity for the constructs in the conceptual model.

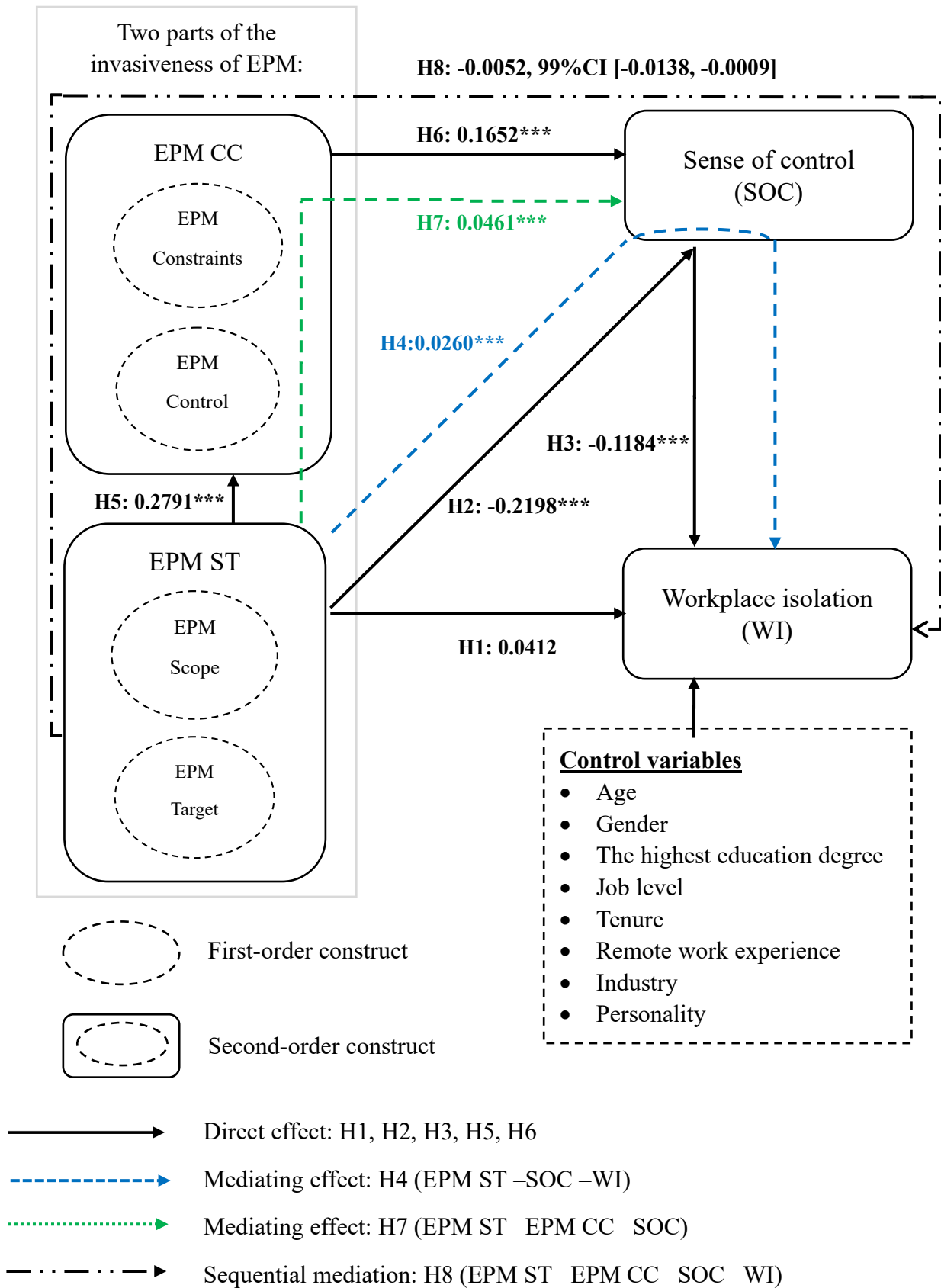
**Table 3.5: Heterotrait–Monotrait ratios and correlations with constructs**

<i>Panel A: HTMT ratios</i>									
Construct:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>EPM_ST</i> (1)	-								
<i>EPM_CC</i> (2)	0.577								
<i>SOC</i> (3)	0.191	0.502							
<i>WI</i> (4)	0.110	0.230	0.214						
Personality ( <i>P_EXTRA</i> ) (5)	0.090	0.232	0.225	0.156					
Personality ( <i>P_AGREE</i> ) (6)	0.087	0.417	0.312	0.192	0.370				
Personality ( <i>P_CONSCI</i> ) (7)	0.191	0.286	0.270	0.143	0.251	0.448			
Personality ( <i>P_NEURO</i> ) (8)	0.123	0.451	0.353	0.174	0.409	0.531	0.418		
Personality ( <i>P_OPEN</i> ) (9)	0.103	0.148	0.074	0.077	0.283	0.197	0.090	0.086	-
<i>Panel B: Correlations with constructs</i>									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>EPM_ST</i> (1)	(0.871)								
<i>EPM_CC</i> (2)	0.262***	(0.761)							
<i>SOC</i> (3)	-0.158***	0.213***	(0.808)						
<i>WI</i> (4)	0.100*	-0.039	-0.196***	(0.783)					
Personality ( <i>P_EXTRA</i> ) (5)	0.046	0.042	0.177**	0.126**	(0.905)				
Personality ( <i>P_AGREE</i> ) (6)	0.059	0.143**	0.253**	0.006	0.259**	(0.757)			
Personality ( <i>P_CONSCI</i> ) (7)	0.117*	0.130**	0.208**	-0.005	0.177**	0.279**	(0.864)		
Personality ( <i>P_NEURO</i> ) (8)	-0.079	-0.182**	-0.289**	0.073	-0.320**	-0.380**	-0.316**	(0.900)	
Personality ( <i>P_OPEN</i> ) (9)	-0.043	0.022	-0.003	0.017	0.159**	0.029	0.056	-0.013	(0.828)

*Note:* HTMT refers to the heterotrait–monotrait ratio of correlations. VIF refers to item’s variance inflation factor. *EPM\_ST* refers to the invasive use of EPM. *EPM\_CC* refers to the organisation’s constraints and control on EPM. Square roots of AVEs are reported in parentheses as shown diagonally. VIFs acceptable if < 5. VIFs: *EPM\_ST* = 1.163; *EPM\_CC* = 1.188; *WI* = 1.078; *SOC* = 1.304; *P\_EXTRA* = 1.228; *P\_AGREE* = 1.259; *P\_CONSCI* = 1.186; *P\_NEURO* = 1.360; *P\_OPEN* = 1.044. \*, \*\*, \*\*\* represent two-tailed statistical significance of correlation at the 0.10, 0.05 and 0.01 levels, respectively.

To evaluate the presence of common method bias, this study conducts Harman's one-factor test following the procedure outlined by Podsakoff and Organ (1986). All principal constructs in the model are included in a principal component analysis, resulting in four factors, each with eigenvalues exceeding 1 and a cumulative variance of 69.85%. With the first factor accounting for only 18.49% of the variance, it suggests that no single factor dominates the explanation of most variance (Podsakoff and Organ 1986). Therefore, this study concludes that common method bias does not pose a significant threat to the main results. Figure 3.2 presents the results of the structural model.

**Figure 3.2: Path coefficients of the structural model**



### 3.6 Tests of Hypotheses

This study tests hypotheses using PROCESS in the Statistical Package for the Social Science (SPSS) version 4.0, designed by Hayes (2018).<sup>23</sup> PROCESS enables this study to test hypotheses on the direct effect (H1–H3, H5 and H6), simple mediation hypotheses (H4 and H7) and sequential mediation hypothesis (H8).

#### 3.6.1 Test of Hypotheses: Direct Hypotheses

Table 3.6 summarises the results for H1–H4. H1 predicts that EPM ST will be positively associated with employees' perceptions of workplace isolation. As shown in Panel A of Table 3.6 and Figure 3.2, the path coefficient for the relationship between *EPM\_ST* and *WI* is positive but not statistically significant (coeff. = 0.0412, *p*-value = 0.1530), which does not support H1. This result needs to be interpreted together with the findings for H2–H4.

As shown in Panel A of Table 3.6, EPM ST has a significant and negative relationship with employees' sense of control (coeff. = -0.2198, *p*-value = 0.0000). This result supports H2 that employees under increased EPM ST are likely to perceive a lower sense of control at work. The results also indicate a statistically significant negative relationship between an employee's sense of control and workplace isolation (coeff. = -0.1184, *p*-value = 0.0001), supporting H3 that employees are more likely to perceive workplace isolation when they perceive they have less control at work.

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<sup>23</sup> In alignment with Chong and Wang (2019), this study calculates a composite score for reflective constructs by averaging their respective items before conducting data analysis using PROCESS. As noted by Hayes (2018), this approach facilitates in decreasing measurement error, increasing the capacity to represent multiple facets of a concept and easing of result replication across studies.

**Table 3.6: Results of simple mediation effect (mediator: SOC)**

<i>Panel A: Direct effect (linear)</i>						
	Direct effect	SE	<i>t</i> -value	<i>p</i> -value		
H1: <i>EPM_ST</i> – <i>WI</i>	0.0412	0.0288	1.4313	0.1530		
H2: <i>EPM_ST</i> – <i>SOC</i>	-0.2198	0.0449	-4.8942	0.0000		
H3: <i>SOC</i> – <i>WI</i>	-0.1184	0.0295	-4.0163	0.0001		
<i>Panel B: Direct and indirect effect (PROCESS)</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Total effect	0.0412	0.0288	1.4313	0.1530	-0.0333	0.1157
Direct effect:						
<i>EPM_ST</i> – <i>WI</i>	0.0152	0.0291	0.5227	0.6014	-0.0600	0.0904
H4: Indirect effect:						
<i>EPM_ST</i> – <i>SOC</i> – <i>WI</i>	0.0260	0.0086			0.0070	0.0517
<i>Panel C: Sobel test of indirect effect</i>						
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value		
H4: <i>EPM_ST</i> – <i>SOC</i> – <i>WI</i>	0.0260	0.0084	3.1037	0.0019		
<i>Panel D: Bootstrapping approach of indirect effect</i>						
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
H4: <i>EPM_ST</i> – <i>SOC</i> – <i>WI</i>	0.0161	0.0066	2.4850	0.0130	0.0020	0.0365

*Notes:* LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error; *EPM\_ST*: the invasive use of EPM; *WI*: workplace isolation; *SOC*: sense of control. Bootstrap sample size = 5,000.

### **3.6.2 Test of Hypotheses: Mediating Hypotheses (Sense of Control)**

H4 predicts that the relationship between EPM ST and workplace isolation will be mediated by employees' sense of control. Results shown in Panel B of Table 3.6 reveal that the relationship between EPM ST and workplace isolation involves two effects: (1) a direct effect of 0.0152 ( $p$ -value = 0.6014) and (2) an indirect effect of 0.0260 (99% CI [0.0070, 0.0517]). According to Hayes (2018), full mediation occurs when a significant relationship exists between the independent variable and the mediating variable, which also has a significant impact on the dependent variable after controlling for the effect of the independent variable. As shown in Panel A of Table 3.6, the path coefficient (−0.2198) for the relationship between EPM ST and sense of control is statistically significant ( $p$ -value = 0.0000), and the path coefficient (−0.1184) for the relationship between sense of control and workplace isolation is statistically significant after controlling for the effect of EPM ST ( $p$ -value = 0.0001). As the indirect effect of EPM ST on workplace isolation with the mediator (i.e., sense of control) shown in Panel B is statistically significant (coeff. = 0.0260, 99% CI [0.0070, 0.0517]), full mediation occurs in this study. Collectively, these results suggest that the relationship between EPM ST and workplace isolation is mediated by employees' sense of control.

This study further tests the robustness of the indirect effect using the Sobel test and the bootstrapping approach. Consistent with the main results reported in Panel B of Table 3.6, the results from Panel C and D support the mediating role of employees' sense of control on the relationship between EPM ST and workplace isolation.

### **3.6.3 Test of Hypotheses: Mediating Hypotheses (EPM CC)**

Table 3.7 summarises the results for H5–H7. Panel A of Table 3.7 shows a statistically significant positive relationship between EPM ST and EPM CC (coeff. =

0.2791,  $p$ -value = 0.0000), which supports H5. This result is consistent with monitoring research showing that organisations implementing more forms of monitoring practice and collecting more personal data are more likely to apply constraints and controls on EPM use (McNall and Stanton 2011; Ravid et al. 2020). Results shown in Panel A of Table 3.7 also suggest that EPM CC has a significant and positive relationship with employees' sense of control (coeff. = 0.1652,  $p$ -value = 0.0000), which supports H6.

H7 explores whether the relationship between EPM ST and employees' sense of control is negatively mediated by EPM CC. As results in Panel B of Table 3.7 show, the total effect of EPM ST on employees' sense of control is negative and significant (coeff. =  $-0.2198$ ,  $p$ -value = 0.0000), and comprised of two effects: (1) a negative direct effect of  $-0.2660$  ( $p$ -value = 0.0000) and (2) a positive indirect effect of 0.0461 (99% CI [0.0140, 0.0898]). According to Tzelgov and Henik (1991) and MacKinnon et al. (2000), in a mediation model, a suppression effect is present when the direct and mediated effects of an independent variable on a dependent variable have opposite signs. This is referred to as an inconsistent mediation model (Nunnally and Bernstein 1994), as opposed to a consistent mediation model in which the direct and mediated effects have the same sign. The results in Panel B of Table 3.7 show that the estimate of the total effect ( $-0.2198$ ) is closer to zero than that of the direct effect ( $-0.2660$ ), and the indirect (0.0461) and direct ( $-0.2660$ ) effects have opposite signs. These results indicate the presence of inconsistent mediation (i.e., a suppressor effect). While the general effect of EPM CC is to enhance employees' sense of control at work, this specific mediating pathway had an unexpected outcome. In this case, organisations employing high levels of EPM ST seemed to implement greater EPM CC, and this has the effect of mitigating the negative impact of EPM ST on employees' sense of control.

Therefore, the results reported in Table 3.7 support the prediction in H7 that an organisation's constraints and controls implemented on EPM use can dilute the negative effect of EPM ST and transmit a less negative effect to employees' sense of control. This finding indicates that an organisation's constraints and control on EPM can be helpful for organisations implementing tighter monitoring practices for their employees and better managing resource allocations between the organisation and employees. The results presented in Panels C and D of Table 3.7 test the robustness of the indirect effect using the Sobel test and the bootstrapping approach are consistent with the main findings.

**Table 3.7: Results of simple mediation effect (mediator: *EPM\_CC*)**

<i>Panel A: Direct effect (linear)</i>							
	Direct effect	SE	<i>t</i> -value	<i>p</i> -value			
	<i>EPM_ST</i> – <i>SOC</i>	-0.2198	0.0449	-4.8942	0.0000		
H5:	<i>EPM_ST</i> – <i>EPM_CC</i>	0.2791	0.0556	5.0184	0.0000		
H6:	<i>EPM_CC</i> – <i>SOC</i>	0.1652	0.0370	4.4682	0.0000		
<i>Panel B: Direct and indirect effect (PROCESS)</i>							
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI	
	Total effect	-0.2198	0.0449	-4.8942	0.0000	-0.3360	-0.1037
	Direct effect: <i>EPM_ST</i> – <i>SOC</i>	-0.2660	0.0452	-5.8827	0.0000	-0.3829	-0.1490
H7:	Indirect effect: <i>EPM_ST</i> – <i>EPM_CC</i> – <i>SOC</i>	0.0461	0.0147			0.0140	0.0898
<i>Panel C: Sobel test of indirect effect</i>							
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value			
H7:	<i>EPM_ST</i> – <i>EPM_CC</i> – <i>SOC</i>	0.0461	0.0138	3.3361	0.0008		
<i>Panel D: Bootstrapping approach of indirect effect</i>							
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI	
H7:	<i>EPM_ST</i> – <i>EPM_CC</i> – <i>SOC</i>	0.0768	0.0177	4.3226	0.0000	0.0354	0.1280

Notes: LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error; *EPM\_ST*: the invasive use of EPM; *EPM\_CC*: the organisation's constraints and control on EPM. *SOC*: sense of control; bootstrap sample size = 5,000.

Furthermore, this study uses Hayes's (2018) Model 6 to assess the sequential mediation hypothesis, H8, which predicts that EPM CC and employees' sense of control will serially mediate the relationship between EPM ST and employee perceptions of workplace isolation. Panel A of Table 3.8 reports the regression results, indicating that the coefficients of control variables are not statistically significant except for the job level, the remote work month, and two personality variables (i.e., extraversion and neuroticism). The sequential mediation model simultaneously tests the direct effect of EPM ST on workplace isolation and the indirect effects of EPM ST on workplace isolation via EPM CC and employees' sense of control.

Results in Panel B of Table 3.8 suggest that the direct effect of EPM ST on workplace isolation is not statistically significant (coeff. = 0.0234,  $p$ -value = 0.4395). However, the path coefficient (-0.0052) for the relationship between EPM ST and workplace isolation via EPM CC and employees' sense of control is negative and statistically significant (99% CI [-0.0138, -0.0009]). Given the supportive findings for H5-H7, which show a positive association between EPM ST and EPM CC, with EPM CC acting as a suppressor in the relationship between EPM ST and employees' sense of control, the results shown in Panel B of Table 3.8 indicate that EPM CC alleviates the negative impact of EPM ST on employees' sense of control. This leads to a less negative impact on employee perceptions of workplace isolation. Taken together, these results support for H8.

**Table 3.8: Results of sequential mediation effect (mediator 1: *EPM CC*; mediator 2: *SOC*)***Panel A: Regression results*

	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>WI regressed on:</i>						
Constant	2.2137	0.5032	4.3989	0.0000	0.9120	3.5154
<i>EPM_ST</i>	0.0234	0.0302	0.7737	0.4395	-0.0547	0.1015
<i>EPM_CC</i>	-0.0244	0.0243	-1.0023	0.3168	-0.0873	0.0385
<i>SOC</i>	-0.1122	0.0301	-3.7263	0.0002	-0.1901	-0.0343
Gender	0.0267	0.0892	0.2999	0.7644	-0.2039	0.2573
Age	0.0013	0.0043	0.3071	0.7589	-0.0099	0.0126
Highest degree	-0.0558	0.0624	-0.8946	0.3715	-0.2171	0.1055
Job level	0.2093	0.0961	2.1788	0.0299	-0.0392	0.4578
Tenure	-0.0052	0.0086	-0.6014	0.5479	-0.0275	0.0171
Remote month	-0.0127	0.0058	-2.1709	0.0305	-0.0278	0.0024
Personality ( <i>P_EXTRA</i> )	0.1355	0.0404	3.3522	0.0009	0.0310	0.2401
Personality ( <i>P_AGREE</i> )	0.0424	0.0605	0.7005	0.4840	-0.1142	0.1990
Personality ( <i>P_CONSCI</i> )	0.0371	0.0558	0.6646	0.5067	-0.1072	0.1813
Personality ( <i>P_NEURO</i> )	0.0925	0.0470	1.9710	0.0493	-0.0289	0.2140
Personality ( <i>P_OPEN</i> )	-0.0073	0.0460	-0.1586	0.8740	-0.1264	0.1118
Industry FE				Yes		
R-sq = 0.1072						

*Panel B: Mediating effect*

	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Total effect	0.0412	0.0288	1.4313	0.1530	-0.0333	0.1157
Direct effect: <i>EPM_ST</i> – <i>WI</i>	0.0234	0.0302	0.7737	0.4395	-0.0547	0.1015
Indirect effects:	Effect	BootSE			BootLLCI	BootULCI
Total	0.0179	0.0122			-0.0132	0.0507
<i>EPM_ST</i> – <i>EPM_CC</i> – <i>WI</i>	-0.0068	0.0073			-0.0276	0.0115
<i>EPM_ST</i> – <i>SOC</i> – <i>WI</i>	0.0299	0.0101			0.0070	0.0589
H8: <i>EPM_ST</i> – <i>EPM_CC</i> – <i>SOC</i> – <i>WI</i>	-0.0052	0.0024			-0.0138	-0.0009

Notes: LL: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. *EPM\_ST*: the invasive use of EPM; *EPM\_CC*: the organisation's constraints and control EPM. *SOC*: sense of control; *WI*: workplace isolation. Bootstrap sample size = 5,000.

### **3.6.4 Robustness Tests**

This study assesses the robustness of the findings in the main tests through two sets of tests. First, this study re-evaluates all models employed in the main tests using alternative measures for EPM ST and EPM CC (calculating the construct score based on the equally weighted average method). In the main tests, this study calculates scores for EPM ST and EPM CC using a weighted summation of measurement items, with weights derived from a PLS regression. Prior studies commonly use the equally weighted average of measurement items to calculate construct scores (e.g., Rai et al. 2006). This approach is recommended for developing new measures and improving transferability (Hair et al. 2010). To examine whether using different methods for construct scores calculation affects the observed relationships reported in the main tests, this study calculates EPM ST and EPM CC scores using the equally weighted approach.

Second, the study employs alternative measures for EPM ST. To measure EPM ST, the initial approach rescales the value of EPM scope to compute its construct score. In the robustness tests, all models from the main tests are re-evaluated using alternative measures for EPM ST, specifically by assessing it with either the raw score of EPM target or the raw score of EPM scope.

#### **3.6.4.1 Measure of EPM ST and EPM CC Using the Equally Weighted Method**

Following the literature (e.g., Rai et al. 2006), this study measures EPM ST and EPM CC using the equally weighted method. This study calculates EPM ST as the average value based on the score of EPM scope and EPM target.<sup>24</sup> EPM CC is

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<sup>24</sup> Consistent with the study discussed in Chapter 2 (see Section 2.5.2.3), this study uses a linear transformation to rescale the range of EPM scope from 1–17 to a new range of 1–7. This transformation is applied to maintain a proportional relationship between the old and new values. Subsequently, EPM scope, EPM target, EPM constraints and EPM control scores are calculated using the equally weighted average method of measurement items.

measured as the average of the scores of EPM constraints and EPM control. Results are summarised in Table 3.9 (full result tables are reported in Appendix D Table 3.12–3.14).

In line with the main tests, there is no significant relationship between EPM ST and employees' perceived workplace isolation, while EPM ST exhibits a significantly negative relationship with employees' sense of control. Notably, as shown in Panel B, the coefficient of the indirect effect of EPM ST to workplace isolation via sense of control is statistically significant, indicating that mediation takes place between EPM ST and employees' perceived workplace isolation through the pathway of sense of control. These findings offer support for H2, H3 and H4. The findings presented in Panel C of Table 3.9 indicate that EPM ST has a positive and statistically significant correlation with both EPM CC and employees' sense of control, which supports hypotheses H5 and H6. The results shown in Panel D highlight that the total effect estimate of EPM ST on employees' sense of control ( $-0.3052$ ) is closer to zero than is the direct effect ( $-0.3696$ ). The indirect ( $0.0644$ ) and direct ( $-0.3696$ ) effects exhibit opposing signs, suggesting the existence of inconsistent mediation, which aligns with the main results that the relationship between EPM ST and employees' sense of control is mediated negatively by EPM CC.

These findings support H7. Panel E of Table 3.9 is also consistent with the main results, supporting H8. While the direct effect of EPM ST on workplace isolation is not statistically significant, the path coefficient representing the relationship between EPM ST and workplace isolation, mediated through EPM CC and employees' sense of control, is negative and statistically significant. These results, in line with the supportive findings for H5–H7, suggest that the use of EPM CC mitigates the negative impact of EPM ST on employees' sense of control, leading to a less negative effect on employee perceptions of workplace isolation.

**Table 3.9: Summary of results when measuring EPM ST through the equal weighted average method**

<i>Panel A: Direct effect (mediator: SOC)</i>						
	Direct effect	SE	t-value	p-value		
H1: <i>EPM_ST–WI</i>	0.0535	0.0401	1.3332	0.1831		
H2: <i>EPM_ST–SOC</i>	-0.3052	0.0626	-4.8748	0.0000		
H3: <i>SOC–WI</i>	-0.1191	0.0295	-4.0389	0.0001		
<i>Panel B: Direct and indirect effect (mediator: SOC)</i>						
	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI
Total effect	0.0535	0.0401	1.3332	0.1831	-0.0503	0.1574
Direct effect: <i>EPM_ST–WI</i>	0.0172	0.0405	0.4245	0.6714	-0.0876	0.1220
H4: Indirect effect: <i>EPM_ST–SOC–WI</i>	0.0363	0.0119			0.0097	0.0718
<i>Panel C: Direct effect (mediator: EPM_CC)</i>						
	Direct effect	SE	t-value	p-value		
H5: <i>EPM_ST–EPM_CC</i>	0.2657	0.0533	4.9903	0.0000		
H6: <i>EPM_CC–SOC</i>	0.2424	0.0538	4.5039	0.0000		
<i>Panel D: Direct and indirect effect (EPM_CC)</i>						
	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI
Total effect	-0.3052	0.0626	-4.8748	0.0000	-0.4671	-0.1432
Direct effect: <i>EPM_ST–SOC</i>	-0.3696	0.0630	-5.8692	0.0000	-0.5324	-0.2067
H7: Indirect effect: <i>EPM_ST–EPM_CC–SOC</i>	0.0644	0.0208			0.0212	0.1283
<i>Panel E: Results of sequential mediation effect (mediator 1: EPM_CC; mediator 2: SOC)</i>						
	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI
Total effect	0.0535	0.0401	1.3332	0.1831	-0.0503	0.1574
Direct effect: <i>EPM_ST–WI</i>	0.0280	0.0421	0.6661	0.5057	-0.0808	0.1368
Indirect effects:	Effect	BootSE			BootLLCI	BootULCI
Total	0.0255	0.0168			-0.0184	0.0719
<i>EPM_ST–EPM_CC–WI</i>	-0.0090	0.0099			-0.0372	0.0158
<i>EPM_ST–SOC–WI</i>	0.0418	0.0139			0.0106	0.0832
H8: <i>EPM_ST–EPM_CC–SOC–WI</i>	-0.0073	0.0034			-0.0196	-0.0013

*Notes:* LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error; *EPM\_ST*: the invasive use of EPM; *EPM\_CC*: the organisation’s constraints and control on EPM; *SOC*: employee’s sense of control; *WI*: workplace isolation. Bootstrap sample size = 5,000.

#### **3.6.4.2 Measure of EPM ST Using EPM Scope**

To examine whether the impact of the invasiveness of EPM on employees' sense of control and workplace isolation is dominated by EPM scope, this study uses EPM scope (*SCOPE*) to measure EPM ST. The results are summarised in Table 3.10 (full result tables are reported in Appendix D from Table 3.15 to Table 3.17), which are consistent with the main results.

In particular, the results shown in Panel A and B of Table 3.10 indicate that employees' sense of control serves as a mediator in the relationship between the scope of EPM and perceived workplace isolation, which supports H4. Panel C of Table 3.10 shows that the scope of EPM has a significant impact on employees' sense of control at work, and this relationship is mediated by EPM CC. These results support H7. Further, the results in Panel E of Table 3.10 suggest that EPM CC negatively mediates the relationship between the scope of EPM and employees' sense of control. Combined with the supporting results for H2–H7, results presented in Panel E of Table 3.10 suggest that EPM CC can mitigate the negative effect of the scope of EPM on employees' sense of control, leading to less negative effects on employees' perception of workplace isolation, consistent with the prediction in H8.

**Table 3.10: Summary of results when measuring EPM ST via EPM scope**

<i>Panel A: Direct effect (mediator: SOC)</i>						
	Direct effect	SE	<i>t</i> -value	<i>p</i> -value		
H1: <i>SCOPE –WI</i>	0.0269	0.0374	0.7173	0.4736		
H2: <i>SCOPE –SOC</i>	-0.2441	0.0587	-4.1605	0.0000		
H3: <i>SOC –WI</i>	-0.1223	0.0293	-4.1757	0.0000		
<i>Panel B: Direct and indirect effect (mediator: SOC)</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Total effect	0.0269	0.0374	0.7173	0.4736	-0.0700	0.1237
Direct effect: <i>SCOPE –WI</i>	-0.0030	0.0375	-0.0802	0.9361	-0.0999	0.0939
H4: Indirect effect: <i>SCOPE –SOC –WI</i>	0.0299	0.0103			0.0082	0.0610
<i>Panel C: Direct effect (mediator: EPM_CC)</i>						
	Direct effect	SE	<i>t</i> -value	<i>p</i> -value		
H5: <i>SCOPE –EPM_CC</i>	0.2965	0.0728	4.0717	0.0001		
H6: <i>EPM_CC –SOC</i>	0.1496	0.0370	4.0371	0.0001		
<i>Panel D: Direct and indirect effect (EPM_CC)</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Total effect	-0.2441	0.0587	-4.1605	0.0000	-0.3959	-0.0924
Direct effect: <i>SCOPE –SOC</i>	-0.2885	0.0588	-4.9094	0.0000	-0.4405	-0.1365
H7: Indirect effect: <i>SCOPE –EPM_CC –SOC</i>	0.0443	0.0164			0.0103	0.0939
<i>Panel E: Results of sequential mediation effect (mediator 1: EPM CC; mediator 2: SOC)</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Total effect	0.0269	0.0374	0.7173	0.4736	-0.0700	0.1237
Direct effect: <i>SCOPE –WI</i>	0.0040	0.0384	0.1040	0.9172	-0.0954	0.1034
Indirect effects:	Effect	BootSE			BootLLCI	BootULCI
Total	0.0229	0.0137			-0.0113	0.0603
<i>SCOPE –EPM_CC –WI</i>	-0.0059	0.0076			-0.0274	0.0141
<i>SCOPE –SOC –WI</i>	0.0340	0.0115			0.0093	0.0685
H8: <i>SCOPE –EPM_CC –SOC –WI</i>	-0.0052	0.0024			-0.0139	-0.0009

*Notes:* LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error; *SCOPE*: the scope of EPM; *EPM\_CC*: the organisation’s constraints and control on EPM; *SOC*: employee’s sense of control; *WI*: workplace isolation. Bootstrap sample size = 5,000.

#### **3.6.4.3 Measure of EPM ST Using EPM Target**

In this study, the score for EPM target (*TARGET*) is utilised to measure the invasive use of EPM. The results are summarised in Table 3.11 (with full result tables available in Appendix D Table 3.18–3.20). Results align with the main results, indicating that both EPM CC and employees' sense of control mediate the relationship between EPM target and perceived workplace isolation. Specifically, EPM CC plays a role in mitigating the adverse effects of EPM target on employees' sense of control, thereby alleviating the negative impact on their perception of workplace isolation.

**Table 3.11: Summary of results when measuring EPM ST via EPM target**

<i>Panel A: Direct effect (mediator: SOC)</i>						
	Direct effect	SE	<i>t</i> -value	<i>p</i> -value		
H1: <i>TARGET</i> – <i>WI</i>	0.0376	0.0236	1.5920	0.1121		
H2: <i>TARGET</i> – <i>SOC</i>	-0.1601	0.0371	-4.3217	0.0000		
H3: <i>SOC</i> – <i>WI</i>	-0.1172	0.0293	-4.0000	0.0001		
<i>Panel B: Direct and indirect effect (mediator: SOC)</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Total effect	0.0376	0.0236	1.5920	0.1121	-0.0235	0.0987
Direct effect: <i>TARGET</i> – <i>WI</i>	0.0188	0.0237	0.7941	0.4276	-0.0425	0.0802
H4: Indirect effect: <i>TARGE</i> – <i>SOC</i> – <i>WI</i>	0.0188	0.0066			0.0050	0.0382
<i>Panel C: Direct effect (mediator: EPM_CC)</i>						
	Direct effect	SE	<i>t</i> -value	<i>p</i> -value		
H5: <i>TARGET</i> – <i>EPM_CC</i>	0.2087	0.0458	0.2024	4.5532		
H6: <i>EPM_CC</i> – <i>SOC</i>	0.1555	0.0371	0.1910	4.1916		
<i>Panel D: Direct and indirect effect (EPM_CC)</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Total effect	-0.1601	0.0371	-4.3217	0.0000	-0.2560	-0.0643
Direct effect: <i>TARGET</i> – <i>SOC</i>	-0.1926	0.0372	-5.1752	0.0000	-0.2889	-0.0963
H7: Indirect effect: <i>TARGET</i> – <i>EPM_CC</i> – <i>SOC</i>	0.0325	0.0112			0.0098	0.0658
<i>Panel E: Results of sequential mediation effect (mediator 1: EPM CC; mediator 2: SOC)</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Total effect	0.0376	0.0236	1.5920	0.1121	-0.0235	0.0987
Direct effect: <i>TARGET</i> – <i>WI</i>	0.0251	0.0244	1.0261	0.3054	-0.0381	0.0883
Indirect effects:	Effect	BootSE			BootLLCI	BootULCI
Total	0.0125	0.0090			-0.0096	0.0370
<i>TARGET</i> – <i>EPM_CC</i> – <i>WI</i>	-0.0053	0.0053			-0.0209	0.0094
<i>TARGET</i> – <i>SOC</i> – <i>WI</i>	0.0214	0.0074			0.0050	0.0427
H8: <i>TARGET</i> – <i>EPM_CC</i> – <i>SOC</i> – <i>WI</i>	-0.0036	0.0018			-0.0099	-0.0005

*Notes:* LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error; *TARGET*: the target of EPM; *EPM\_CC*: the organisation’s constraints and control on EPM; *SOC*: employee’s sense of control; *WI*: workplace isolation. Bootstrap sample size = 5,000.

### 3.7 Conclusion and Limitations

This study provides evidence that the invasive use of EPM (i.e., EPM ST) is positively associated with employees' workplace isolation via the mediating effect of employees' sense of control at work. The organisation's constraints and control on EPM (i.e., EPM CC) serve as a negative mediator for both the direct impact of EPM ST on employees' sense of control and the indirect impacts of EPM ST on employees' workplace isolation through their sense of control at work.

This study makes several contributions to the literature. First, it adds to the management control literature by investigating technology-based monitoring. Nappert and Bamber (2023) indicate that new technologies prompt a shift from *ex post* to *ex ante* performance management. Most management accounting research focuses on outcome-based controls and finds that these controls (e.g., subjective or objective performance evaluation, relative performance evaluation) benefit organisations by reducing agency costs and facilitating decision-making and innovation (e.g., Bol and Smith 2011; Brown et al. 2015; Hao et al. 2021; Mouritsen and Kreiner 2016). However, the impact of technology-based *ex ante* management control on employee wellbeing remains largely unknown. The findings of this study suggest that the invasiveness of EPM diminishes employee control at work, subsequently exacerbating perceptions of workplace isolation. Second, the study extends understanding of performance monitoring in remote work contexts. Despite the rapid adoption of EPM in remote work environment (Fayard et al. 2021; Kniffin et al. 2021), there remains a research gap in understanding how these monitoring practices affect remote employees (Schedlinsky et al. 2020; Yang et al. 2022). This is particularly detrimental in remote settings, where psychological well-being is already compromised due to reduced organisational support and connectivity challenges. This study suggests that invasive EPM

significantly disrupts the balance of resources, transferring substantial work-related resources and private data from employees to employers, thereby impairing autonomy and relatedness. This study highlights the importance of organisational policies and actions in guiding technology-based monitoring practices. These efforts can enhance employee acceptance of EPM and mitigate EPM's impacts on employees' resource loss, particularly their sense of control, and the subsequent impact on their well-being, such as workplace isolation.

The findings of this study have the following practical implications. First, the shift from working onsite to a more flexible work arrangement in the post-pandemic era requires organisations to continue investing in technologies like EPM to monitor employees. The findings of this study are of interest to organisations that use or are thinking to adopt EPM in the remote work context. This study indicates that the invasiveness of EPM significantly impacts employees' sense of control at work and thus intensifies workplace isolation, highlighting the importance of exercising caution when designing EPM like its scope and targets. Second, the findings of this study regarding the negative mediating role of the constraints and control placed on EPM use suggest the importance of balancing the resource needs of organisations and employees. While EPM use may inevitably be intrusive (Ravid et al. 2020; Watson et al. 2013), this study suggest that organisations can alleviate employee concerns by imposing explicit limits on EPM and granting employees control over the monitoring process to clarify its purpose and boundaries. For managers implementing EPM, it is crucial to design these monitoring practices with explicit descriptions such as what aspects of work are monitored and how the collected data is used. Ensuring transparency with employees is an important step in mitigating employees' feelings of invasiveness and loss of control. Furthermore, the implementation of EPM should enable employees to

influence or be involved in designing and using monitoring practices, which helps alleviate privacy concerns and foster a supportive work environment.

This study is subject to several limitations. First, this study does not explore changes in EPM invasiveness over time as new monitoring technologies develop. As organisational monitoring practices may change over time, future studies could use a time-variant approach to more effectively capture these changes and to investigate their impacts on employee attitudes and performance. Second, the data for this study were collected through an online survey during the COVID-19 pandemic, issues related to control over one's work and feelings of isolation are also significant factors experienced by a diverse range of individuals throughout this pandemic. Future studies should explore the effects of EPM invasiveness in a post-COVID-19 context to test the robustness of these findings under different circumstances. Third, the EPM scale used in this study has not been used in previous research. Further research is necessary to conduct group discussions and interviews with industry and academic experts to further calibrate and refine the measurement of EPM invasiveness within organisations. Fourth, it would be insightful for future studies to examine the impact of EPM invasiveness on other aspects of employee well-being, such as stress levels and overall mental health, to provide a more comprehensive understanding of its effects on employee wellbeing.

## **Chapter 4: The Impact of the Invasiveness of EPM and the Corporate Social Responsibility Activities on Employee Burnout and Performance**

### **4.1 Introduction**

Bakker, Demerouti, and Sanz-Vergel (2014) describe workplace burnout as an occupation-related syndrome marked by mental and physical exhaustion, stemming from a chronic imbalance between job demands and available resources. Existing studies suggest that burnout negatively affects employee performance (e.g., Bakker et al. 2004; Nahrgang et al. 2011). In a recent report, McKinsey (2020) highlights that employee burnout ‘hit record levels over the past two years’ (p. 2), and ‘burnout rates are continuing to increase’ (p. 3), especially among remote workers.<sup>25</sup> During the COVID-19 pandemic, organisations accelerated the transition to remote work, offering benefits such as flexibility and work-life balance (Felstead and Henseke 2017). To facilitate this shift, organisations increasingly adopt management control driven by advanced technologies such as EPM to monitor remote employee performance (Abril and Harwell 2021; Hughes 2021). The effects of new technology-based monitoring on employee’s performance and wellbeing are however not well-understood (Singh et al. 2022; Waizenegger et al. 2020). This study examines the effects of the invasiveness of EPM on employee burnout and performance in the remote work context.

While EPM serves as a valuable tool for organisations aiming to monitor employee performance in remote work settings (Laird et al. 2018; Levchenko et al. 2011), most management control research focuses on the design and use of traditional performance management mechanism<sup>26</sup>, such as outcome-based performance

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<sup>25</sup> In 2020, the McKinsey Health Institute conducted a survey involving 15,000 employees spanning 15 countries, revealing consistently elevated levels of employee burnout.

<sup>26</sup> The monitoring typically occurs at the end of performance evaluation period when respective employee performance outcome is measured, collected and compared against pre-determined target by organisations (e.g., Anderson et al. 2020; Gan et al. 2020; Hao 2021).

evaluations, primarily examining the organisational benefits from an economic value perspective (e.g., Anderson et al. 2020; Gan et al. 2020; Hao 2021). Given that technologies continuously reconfigure performance management practices, previous research often neglects how these changes affect work forms and influence employee-employer relationships, as well as their impact on employee well-being and performance (Kellogg et al. 2020; Nappert and Bamber 2023). Recent literature suggests that organisations are increasingly pushing the boundaries of what monitoring techniques can do for employees (Laguecir and Leca 2019) and are normalising pervasive monitoring technologies into EPM (Schedlinsky et al. 2020). The extensive data collection advantages of new technologies and the accompanying algorithmic data analysis may inevitably lead to unintended consequences for employee wellbeing and performance, necessitating further investigation (Manoochehri and Pinkerton 2003; Patil and Bernstein 2022). Given the prevalent issue of burnout among employees, it is crucial to explore the mechanisms by which burnout occurs, particularly in emerging technology contexts (Ninaus et al. 2021; Spagnoli et al. 2020). Therefore, this study examines the impact of the invasiveness of EPM, characterised by EPM ST<sup>27</sup>, on employee burnout in remote work settings. Additionally, considering that the primary goal of EPM is to enhance performance—which can be impaired by burnout—this study also explores whether EPM indirectly affects employee performance by influencing levels of burnout.

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<sup>27</sup> Based on the discussion of EPM invasiveness in Section 2.4.5, EPM ST—involving a greater number of forms of monitoring techniques to observe employees and capture various types of information—contributes to the invasiveness of EPM. EPM CC, on the other hand, represents the organisation’s policies and actions aimed at reducing EPM invasiveness. According to the measurement validation discussed in Section 2.6.2.3, the results suggest that EPM ST and EPM CC are two constructs that exert opposite effects on EPM invasiveness. This supports the appropriateness of treating EPM ST and EPM CC as separate constructs. This study focuses specifically on the invasive use of EPM, thereby utilising EPM ST to capture this aspect of EPM Invasiveness.

This study uses the job demands-resources (JD-R) model (Bakker and Demerouti 2007) as its theoretical framework.<sup>28</sup> The JD-R model extends the COR theory and suggests that burnout occurs when employees experience intensified work stress resulting from the imbalance between job demands and job resources (Maslach and Leiter 2008, 2016). The extensive information collection of EPM ST inevitably creates a high-stress environment and increases performance expectations, which requires more attention and effort at work (Ayyagari et al. 2011; Jeske and Santuzzi 2015). This increases job demands. Simultaneously, EPM ST reduces employees' perceived control and restricts their work interactions (Anteby and Chan 2018; Bernstein 2012), thereby reducing job resources for employees (Bakker et al. 2005; Crawford et al. 2010). This study posits that EPM ST can exacerbate the imbalance between job demands and resources, intensifying employee burnout and thus affecting employee performance.

As EPM is valuable for organisations aiming to monitor employees in a remote work setting, this study further investigates organisational practices that facilitate mitigation of negative effects of EPM ST on burnout. Specifically, this study investigates whether an organisation's external CSR activities play a moderating role in the relationship between EPM ST, employee burnout and performance. Prior literature suggests that organisations' external CSR activities enhance employee identification with their organisation through increased external prestige and overall attractiveness of the organisation, which contributes to employees' positive responses to internal management practices (Farooq et al. 2014; Schaefer et al. 2021). In the context of EPM, this increased employee identification associated with organisations'

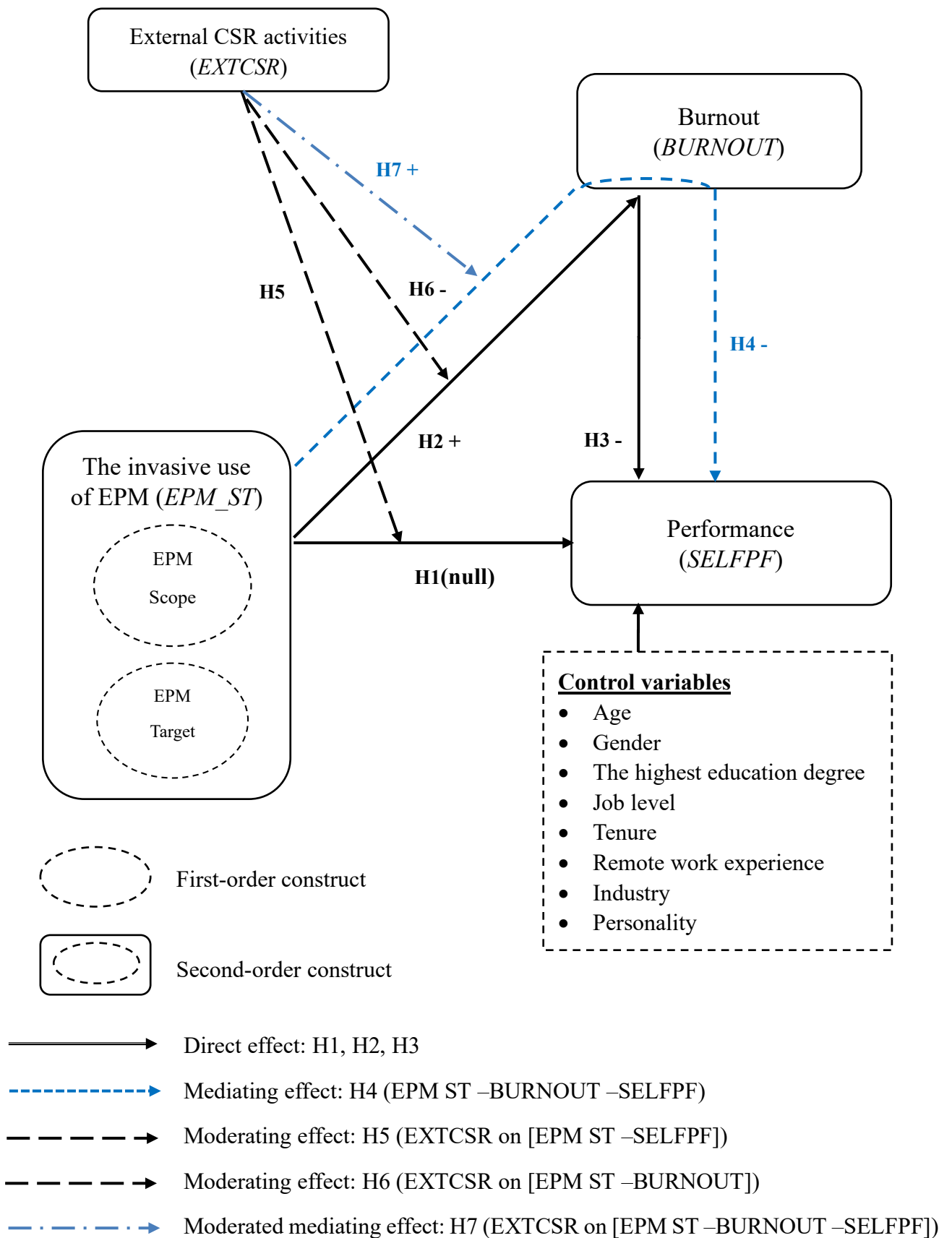
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<sup>28</sup> The theory underpinning the job demands-resources model is the conservation of resources (COR) theory, which posits that individuals strive to acquire, retain and protect resources because they are essential for their wellbeing and the fulfilment of their personal needs (Halbesleben et al. 2014).

external CSR activities may help reduce employees' negative perceptions of EPM ST and mitigate the imbalance between job demands and resources associated with EPM. Therefore, this study predicts that an organisation's external CSR activities will moderate the impact of EPM ST on employee burnout and performance. Figure 4.1 illustrates the theoretical model.

This study uses data collected from the same online survey described in Chapter 3. The survey is completed by 480 employees from various US organisations. The results suggest that high EPM ST leads to higher employee burnout, resulting in lower employee performance. A test of a moderated mediation model reveals that the indirect effect of EPM ST on employee performance through employee burnout is larger for organisations with a lower level of external CSR activities than for organisations with a higher level. The findings of this study indicate that an organisation's external CSR activities moderating the direct effect of EPM ST on employee burnout and the indirect effects of EPM ST on employee performance through employee burnout.

**Figure 4.1: Theoretical (structural) model**



This study makes several contributions. First, this study contributes to the management control literature by offering a detailed exploration of the impact of EPM invasiveness on employee wellbeing and performance. Prior literature predominantly focuses on the general presence of EPM and its impact on employee attitudes and behaviours, with mixed findings. The findings of this study shows that previous research overlooks how EPM functions as a resource within an organisation. Additionally, this study extends the management control literature by exploring the invasiveness of EPM and finds it intensifies employee burnout, leading to decreased performance in remote work settings. The findings of this study also expand understanding of the mechanisms underlying burnout in workplaces employing emerging technologies.

Second, this study contributes to the management control literature on technology-based monitoring by presenting evidence that an organisation's external CSR activities can mitigate the adverse impact of EPM on employees. The literature on management control suggests that the introduction of new technologies enhances control effectiveness (Nappert and Bamber 2023) but also imposes substantial costs such as (e.g., reduced motivational effect) on both employees (Schedlinsky et al. 2020). Despite the ubiquity of technology-based monitoring in organisations, it remains unclear whether an organisation's other management practices effectively complement monitoring controls to mitigate relevant costs to employees. This study contributes to the literature by identifying an organisation's external CSR activities as a moderator of the impact of EPM invasiveness on employee burnout and performance. By leveraging insights from the CSR literature (e.g., Hameed et al. 2016; Ng et al. 2019), this study suggests that, even if external CSR activities do not directly benefit employees, they can enhance employee identification and acceptance of monitoring. This can better

position technology-based monitoring to manage employee performance while mitigating its costs on employee wellbeing and performance.

The rest of Chapter 4 is organised in the following manner. Section 4.2 presents a literature review on the JD-R model, employee burnout and external CSR activities. Section 4.3 discusses the development of hypotheses tested in this study. Section 4.4 describes the research methods. Section 4.5 reports the measurement model. Section 4.6 discusses the results of hypothesis testing. Section 4.7 presents the conclusions and limitations of this study.

## **4.2 Literature Review**

Prior research suggests that employee burnout is the result of a chronic imbalance between job demands and job resources (Crawford et al. 2010; Maslach and Leiter 2016). This literature review section first reviews research on the JD-R model, in Section 4.2.1. Section 4.2.2 reviews the literature on employee burnout. Section 4.2.3 discusses research on external CSR activities. For a review of the literature on EPM invasiveness, refer to Section 2.3 and Section 2.4 in Chapter 2.

### **4.2.1 Job Demands-Resources Model**

The JD-R model is a work stress model that describes how different aspects of the work environment and conditions affect employee wellbeing and performance (Bakker et al. 2004). Extending the COR theory, the JD-R model posits that individuals strive to acquire, retain and protect valuable job resources essential for addressing their job demands (Halbesleben et al. 2006; Ng and Feldman 2014).<sup>29</sup> Previous studies have

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<sup>29</sup> For a review of the COR theory, refer to Section 3.2.1.

applied the JD-R model to various occupational settings, such as education (Bakker et al. 2005) and customer service (Bakker et al. 2003).

The JD-R model posits that all job characteristics can be categorised as either job demands or job resources and emphasises the importance of maintaining a balance between them (Bakker and Demerouti 2007). Job demands are comprised of aspects of the job that require sustained attention and emotional, cognitive or physical effort (Crawford et al. 2010; Demerouti et al. 2001). Excessive job demands are associated with physiological effects such as increased heart rate and elevated blood pressure and are subject to psychological costs, including fatigue and psychological need thwarting (Bakker et al. 2014). Prior research has identified several key job demands that are particularly important for employees, including increased workload and requirements (e.g. Alarcon 2011), work stress (e.g., Halbesleben and Buckley 2004), and role ambiguity (ten Brummelhuis et al. 2012). Employees typically perceive job demands as a loss of job resources because fulfilling these demands requires effort and the expenditure of valuable resources (Bakker et al. 2005, 2014; Maslach and Leiter 2008).

To manage job demands, employees utilise job resources, which encompass the psychological, social, physical or organisational aspects of the job that help address job demands (Bakker and Demerouti 2007). According to Bakker et al. (2004), typical job resources include job autonomy (i.e., perceived control at work), sufficient interaction (e.g., in-person meetings and discussion with colleagues and supervisors), organisational support (i.e., training program for work-related skills and opportunities for career development). As individuals' behaviours are influenced by the resources available to them, Schaufeli and Bakker (2004) suggests that employees who have sufficient job resources available can better cope with their job demands and have positive work experience, such as higher job satisfaction and engagement, which

reduces work-related stress. Conversely, when employees perceive a loss or inadequacy of job resources, they tend to experience exhaustion and psychologically distance themselves from their work, leading to burnout (Bakker and Demerouti 2007).

#### **4.2.2 Employee Burnout**

Burnout is a work-related wellbeing issue defined as a state of physical, emotional and mental exhaustion that results from prolonged exposure to stressful work situations (Schaufeli and Greenglass 2001). According to JD-R model (Demerouti et al. 2001), burnout occurs because of (1) excessive job demands (e.g., increased workload and tight deadlines), resulting in emotional exhaustion, and (2) depleted job resources (e.g., inadequate support and autonomy), resulting in cynicism and diminished professional efficacy.

Prior studies indicate that burnout is often associated with decreased job satisfaction (Tetrick and Winslow 2015), increased personal and task-related conflict (González-Morales et al. 2012), diminished engagement (Bakker et al. 2014; Schaufeli and Bakker 2004) and inhibited creativity and innovation (Huhtala and Parzefall 2007). Ultimately, burnout leads to impaired performance (Bakker et al. 2004; Nahrgang et al. 2011). Individuals experiencing burnout are also more prone to physical and mental illness (Toker and Biron 2012; Umehara et al. 2007). While earlier research mainly focused on on-site work contexts, recent literature highlights that burnout is becoming an increasingly prominent concern for employees in remote work settings. In the American Psychological Association's 2023 Work in America Survey,<sup>30</sup> almost 3 in 5 employees reported that they had experienced burnout. Since the integration of new

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<sup>30</sup> The American Psychological Association's 2023 Work in America Survey involves 2,515 US employees, with more than half of them having experience working remotely. The survey was conducted 17–27 April 2023.

technologies into management practices significantly affects employees' working conditions and environment (Kellogg et al. 2020; Trevor and Holweg 2022), this underscores the necessity of exploring the mechanisms driving burnout in this context.

Only a few studies directly investigate the mechanisms driving burnout in the context with emerging technology, often relying on job stress to imply burnout. For example, by conducting a survey with employees, Singh et al. (2020) find that the implementation of technology via performance platforms led to changes in work patterns and longer work duration, which increased uncertainty and challenged individuals' capabilities and competencies. Delfino and Van der Kolk (2021) indicate that the use of technologies for employee monitoring is linked to increased employee stress levels and a weakened sense of relatedness with others in the organisation. However, prior psychological studies (Pines and Keinan 2005) suggest that the term 'stress' does not equate to burnout, which involves multifaceted feelings of exhaustion, cynicism, and reduced professional efficacy. The only recent study directly examining the impact of technology-based monitoring on employee burnout was conducted by Adams and Mastracci (2019), who found that the presence of body-worn cameras increased burnout among police officers. However, their study focused on a specific monitoring technique and was conducted among police officers with higher burnout levels compared to other professions, which limits the generalisability of the findings to other professions and scenarios where organisations employ multiple monitoring techniques. Therefore, previous literature lacks detailed exploration of the mechanisms underlying burnout in remote work contexts employing emerging technologies.

Following previous psychological research, this study characterises burnout as exhaustion, cynicism and reduced professional efficacy (Crawford et al. 2010; Maslach and Leiter 2008). Exhaustion describes the affective or emotional state of individuals

characterised by depleted emotional resources and a lack of energy. Emotionally exhausted individuals often struggle to cope with the demands of work or their personal lives, leading to reduced motivation at work. Cynicism describes a negative or excessively detached response towards one's work and the people at work, including colleagues and clients, or the organisation itself. Individuals experiencing cynicism exhibit a lack of engagement in their work, display a cynical or sarcastic attitude, and tend to question the motives and integrity of others (Bakker and Demerouti 2007; Bakker et al. 2005). Reduced professional efficacy, as defined by a decline in an individual's feelings of competence and achievement at work, leads to employees feeling dissatisfied with their work-related achievements and perceiving minimal progress in their professional endeavours (Bakker et al. 2004).

#### **4.2.3 External Corporate Social Responsibility Activities**

CSR activities refer to an organisation's actions, policies and initiatives that extend beyond its economic interests (Du et al. 2015). CSR activities play an increasingly integral role in shaping both organisational strategy and stakeholder relationship management (Bhattacharya et al. 2009; Wang and Bansal 2012). Previous CSR literature distinguishes between CSR activities directed towards internal and external stakeholders (Farooq et al. 2017; Rodrigo and Arenas 2008). Internal CSR activities focus on policies and practices aimed at enhancing employee wellbeing, such as work-life balance, human rights, employee training, employee health and safety, equal opportunity and diversity (e.g., Brammer et al. 2007; Gond et al. 2011).

External CSR activities are organisational activities benefiting external stakeholders, including environmental and social practices involving the natural environment (e.g., initiatives that protect natural resources), future generations (e.g., programs contributing to education or sports), society (e.g., projects that promote the

overall development of local communities) and non-government organisations (e.g., programs that support healthcare research; Farooq et al. 2017). While prior research has mainly focused on external CSR activities in relation to external stakeholders—especially customers and investors (e.g., Du et al. 2010; Guiral et al. 2020)—there is increasing interest in understanding whether external CSR activities also affect internal stakeholders, particularly employees.

Previous studies suggest that external CSR activities exert an indirect impact on employee attitudes and behaviours toward their organisation. Ng et al. (2019) conducted field studies and indicated that external CSR activities, as socially responsible activities, communicate an organisation's concerns and care for external stakeholders. These socially responsible activities reinforce organisations' commitment to ethical conduct (e.g., El Akremi et al. 2018) and enhance an organisation's external prestige (e.g., Kim et al. 2010). As individuals tend to favour belonging to prestigious groups because this enhances their self-esteem (Glavas and Godwin 2013; Jones 2010), the benefits of external CSR activities can extend from the organisation to employees. Specifically, Hameed et al. (2016) conducted a cross-sectional survey with employees to investigate the impact of external CSR activities for the local community on employee identification with their organisations. Their study indicated that external CSR activities serve as a valuable mechanism for shaping employees' identities by targeting normative themes, such as values and perceptions, that are beneficial to the organisation. Therefore, employees in organisations engaged in extensive external CSR activities are likely to perceive their organisation as having good external prestige, fostering their identification with the organisation, which translates the effect of external CSR activities into favourable attitudes towards their organisations' internal management practices.

In summary, prior literature suggests that the benefits of external CSR activities may extend beyond considerations for external stakeholders and external prestige, playing a crucial role in shaping favourable attitudes towards the organisation among employees. Building on previous research, this study explores whether external CSR activities complement organisational internal management controls to minimise associated costs to employee wellbeing and performance.

### **4.3 Hypothesis Development**

This study develops seven hypotheses to examine the relationships between EPM ST, external CSR activities, employee burnout and performance.

#### **4.3.1 EPM ST and Employee Performance**

Organisations increasingly rely on monitoring practices to measure and control employee performance, aiming to improve productivity in flexible working contexts (Lyon 2018; The Economist 2022). In an interview study, Wang et al. (2021) found that remote employees view monitoring as essential tools for managing procrastination and maintaining focus on core tasks. For example, some participants reported that monitoring practices, such as monitoring meetings, enhanced their sense of ritual and created an environment that motivated them to devote themselves to work. Similarly, Steel (2007) suggests that monitoring increases the costs associated with procrastination and work delays, thereby motivating individuals to concentrate on their tasks to avoid potential penalties. Employees receive immediate warnings are costs for them if they fail to complete tasks on time or are caught engaging in non-work-related activities. More intense monitoring acts as an external force, driving employees to work productively and meet or exceed performance expectations. Additionally, EPM enables employees to develop a greater sense of responsibility. Alder (2007) suggests that when

employees are aware that their activities are being closely observed, they feel a heightened sense of accountability. This increased accountability can motivate them to commit more fully to their work, thereby enhancing performance.

Based on the discussion above, this study predicts a positive relationship between EPM ST and employee performance. It is anticipated that EPM ST will serve as a resource that reduces employee procrastination and increases their sense of accountability, which positively affects their performance. The first hypothesis is formulated as follows:

*H1: There is positive relationship between EPM ST and employee performance.*

#### **4.3.2 EPM ST and Employee Burnout**

EPM ST can lead to an increasing imbalance between employees' job demands and job resources, resulting in intensified employee burnout. First, EPM ST amplifies job demands. Ravid et al. (2020) suggest that organisations use EPM not only to monitor performance outcomes but also work processes (e.g., time allocation for each task, collaboration with others), and even employees' private lives. To ensure that EPM accurately captures their dedication and performance while protecting personal information, employees inevitably need to invest more effort and attention to manage their work behaviours. This continuous monitoring may also increase employee stress, leading to extended working hours and increased focus to meet perceived performance expectations associated with EPM. These increased job demands expose employees to the risk of emotional exhaustion, which may extend beyond the workplace, resulting in a cynical attitude towards their work and a diminished sense of personal accomplishment—both integral components of burnout (Maslach and Leiter 2008).

Second, EPM ST diminishes employees' job resources. According to the JD-R model (Halbesleben 2006), perceived control and support at work are important

resources for employees in managing their job demands. However, more invasive EPM (higher EPM ST) poses greater challenges for employees' control over their personal or work-related information and activities and restricts employees' work interactions with supervisors and colleagues. Employees under high EPM ST tend to be hesitant to engage in casual communication at work because of the fear of more of their information and behaviours being monitored (e.g., Amick and Smith 1992; McNall and Roch 2009). Consequently, employees experience a significant loss of job resources, and an increased sense of overwhelming job demands, resulting in employee burnout.

Given that employee burnout occurs due to an imbalance between job demands and job resources (Bakker and Demerouti 2007), EPM ST can amplify employee burnout. This study formalizes the second hypothesis as follows:

*H2: EPM ST is positively associated with employee burnout.*

### **4.3.3 The Mediating Role of Employee Burnout**

According to the JD-R model, employees experiencing burnout will enter a cycle in which resource loss leads to further resource depletion and the accumulation of demands, resulting in the continuation of burnout (Demerouti et al. 2001). This negative cycle often traps employees, hindering them from seeking help or striving for changes in their situation, which leads to increased stress and continued ineffective performance. In line with the JD-R model, Bakker et al. (2008) indicate that the experience of burnout reduces employees' self-confidence in solving work-related problems. Bakker et al. (2014) and Schaufeli and Bakker (2004) indicate that burnout is negatively associated with an individual's motivation and engagement at work. Employees experiencing burnout may struggle to find creative solutions to work-related challenges, ultimately resulting in decreased productivity and performance. Therefore, this study formulates the third hypothesis as follows:

*H3: Employee burnout is negatively associated with employee performance.*

This study juxtaposes H2–H3 to propose a mediating role of employee burnout in the following hypothesis:

*H4: The relationship between EPM ST and employee performance is mediated by employee burnout.*

#### **4.3.4 The Moderating Role of External CSR Activities**

Prior studies indicate that external CSR activities serve as valuable tools for communicating the organisation's concerns and care for external stakeholders. For example, Du et al. (2015) suggest that CSR activities benefiting the local community and natural environment reinforce the organisation's commitment to ethical conduct in management practices. These socially responsible activities enhance the organisation's external prestige among stakeholders, shaping employees' identification with the organisation by targeting values and perceptions beneficial to the organisation (Ng et al. 2019). As individuals fulfil their need for self-esteem by taking pride in belonging to a socially well-regarded organisation (Jones 2010), prior studies suggest that employees are motivated to identify themselves with their organisation when it is involved in social welfare activities (e.g., Glavas and Godwin 2013; Jones et al. 2014). Therefore, external CSR activities are likely to strengthen employee identification with the organisation, contributing to more favourable attitudes and perceptions towards the organisations' internal management practices.

In the context of this study, when organisations actively participate in external CSR activities, the positive perspective of EPM is reinforced. Specifically, employees in organisations undertaking intensive CSR activities develop a strong identification with the organisation, which increases their acceptance and positive interpretation of EPM. Although EPM involves monitoring techniques collecting information, those

employees are more likely to view EPM as a fair and supportive tool that empowers them at work (e.g., reducing procrastination and providing feedback on areas where they might improve efficiency; Wang et al. 2021). This mitigates the impact of EPM ST on adding to their job demands (e.g., workloads) and impairing their resources (e.g., autonomy). Conversely, employees in organisations that do not actively engage in external CSR activities may lack the same level of connection and identification with the organisation. Those employees may exhibit lower acceptance and a more negative perception of EPM as an invasion of privacy, leading to increased job demands and potentially resulting in amplified resistance towards EPM.

Therefore, this study expects that the level of external CSR activities will mitigate the impact of EPM ST on employee burnout and performance. Based on the above discussion, this study formulates the following hypotheses:

*H5: The direct relationship between EPM ST and employee performance is negatively moderated by the level of an organisation's external CSR activities.*

*H6: The direct relationship between EPM ST and employee burnout is negatively moderated by the level of an organisation's external CSR activities.*

This study also predicts that an organisations' engagement in external CSR activities moderate the indirect relationship between EPM ST and employee performance via a mediation path of burnout. Specifically, this study expects that employees in organisations with a high level of external CSR activities will be less likely to experience burnout, reducing their likelihood of becoming trapped in a negative cycle of burnout caused by EPM ST. Therefore, by jointly considering H4, H5 and H6, the study posits that external CSR activities will moderate the indirect relationship between EPM ST and employee performance via burnout. This leads to the following hypothesis:

*H7: The indirect relationship between EPM ST and employee performance via a mediation path of employee burnout is negatively (or positively) moderated by the level of an organisation's higher (or lower) external CSR activities.*

#### **4.4 Research Method**

This study uses data collected from an online survey<sup>31</sup> to test all hypotheses. Details of the research method and sample description can be found in Section 3.4.

In this study, key variables are EPM ST, employee burnout, organisations' external CSR activities and employee performance.<sup>32</sup> There are eight control variables: age, gender, highest education degree, job level, tenure, remote work experience, personality and industry of the organisation. Demographic information for the sample is presented in Section 3.4.2. The measurement of control variables is outlined in Section 3.4.3.5.

##### **4.4.1 Variable Measurement**

Consistent with the study discussed in Chapter 3, this study calculates the score for EPM ST using a composite index based on the weights of measurement items (see Section 3.4.3.1). Specifically, this involves two steps. First, this study calculates composite scores for EPM scope and EPM target,<sup>33</sup> using weights obtained from a PLS regression and applying them to the associated measurement items. Second, this study calculates a composite score for EPM ST by aggregating the score of EPM scope and

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<sup>31</sup> The studies discussed in Chapter 3 and 4 used the same online survey questionnaire. The online survey was conducted using a longitudinal approach from January to March 2022.

<sup>32</sup> To mitigate the potential demand effect in the survey, this study prioritises questions about the dependent variable (i.e. burnout) relative to those about independent variables such as EPM invasiveness and external CSR activities.

<sup>33</sup> This study rescales EPM scope from 1–17 to a new range of 1–7 using a linear transformation equation, which is expressed as  $\text{NewValue} = \frac{(\text{OldValue}-1) \times (7-1)}{(17-1)} + 1$ .

EPM target using a weighted sum approach, with the weights determined through PLS regression analysis. The following sections discuss the measurement of employee burnout, external CSR activities and employee performance.

#### **4.4.1.1 Measuring Employee Burnout**

Burnout (*BURNOUT*) describes the state of mental and physical exhaustion caused by one's professional life and is assessed by the Maslach Burnout Inventory-General Survey (MBI-GS; Maslach and Leiter 2008).<sup>34</sup> The MBI-GS includes 16 items that assess the three dimensions of burnout. Exhaustion (*BURN\_EX*) is measured with five items, including 'I feel emotionally drained from my work'. Cynicism (*BURN\_CY*) is also assessed with five items; for example, 'I have become less enthusiastic about my work'. Professional efficacy (*BURN\_PE*) is assessed with six items, including, 'I can effectively solve the problems that arise in my work'. Each item is scored on a 7-point frequency rating scale ranging from 1, 'never' to 7, 'always'. High scores on exhaustion and cynicism and a low score on professional efficacy indicate high burnout. When calculating overall burnout, all items for professional efficacy are reverse scored, suggesting reduced professional efficacy.

#### **4.4.1.2 Measuring External Corporate Social Responsibility Activities**

External CSR activities (*EXTCSR*) describe organisational practices that benefit the natural environment, the local community or consumers, and are primarily concerned with the external image and reputation of the organisation (El Akremi et al. 2015; Glavas and Godwin 2013). This study adopts an 8-item scale developed by

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<sup>34</sup> Prior literature validated the Maslach Burnout Inventory-General Survey (MBI-GS) instrument to measure employee burnout and suggested that the MBI-GS is psychometrically valid and reliable with high construct validity (e.g., Bakker et al. 2002; Schutte et al. 2000; Taris et al. 1999).

Turker (2009) to measure external CSR activities. Empirical studies extensively use this measure to assess the level of an organisation's external CSR activities (e.g., Farooq et al. 2014; Ng et al. 2019). These items capture the benefit of the organisation's external CSR activities to the natural environment, future generations, society and non-government organisations. A sample item is, 'My organisation participates in activities which aim to protect and improve the quality of the natural environment'. The scale options ranged from 1, 'never', to 5, 'always' with a midpoint at 'sometimes'.

#### **4.4.1.3 Measuring Employee Performance**

Employee performance (*SELFPF*) represents employees' self-evaluated performance after the implementation of EPM practices. Following Cravens et al. (2015), this study adapts and modifies items from Behrman and Perreault (1984) for the EPM setting. The focus of measurement items is on assessing the extent to which employee performance changes because of EPM. As the impact of employees' perceptions on their performance is generally subtle and abstract, this cannot be measured easily and objectively by others such as supervisors. Prior literature suggests that self-reported performance measures exhibit less bias than supervisor ratings (e.g., Dunk 1993; Oishi and Roth 2009), and show a high correlation with supervisor ratings and objective measures of performance (e.g., Furnham and Stringfield 1994). Therefore, employees' self-evaluation of their own performance is considered appropriate. As respondents in this survey came from different industries and work positions—whereas Behrman and Perreault's (1984) items focus on a salesperson performance matrix—this study uses one item to capture performance changes associated with the use of EPM in general. Respondents were asked to answer the question 'To what extent has your performance changed after the use of electronic performance monitoring practices?'.

The scale options range from 1, ‘significantly decreased’, to 7, ‘significantly improved’ with a midpoint at ‘about the same’.

#### **4.5 Assessment of the Structural Model and Results**

The measurement (conceptual) model consists of three independent variables—EPM ST (i.e., *EPM ST*), the organisation’s external CSR activities (*EXTCSR*) and employee burnout (*BURNOUT*)—and one dependent variable, employee performance (*SELFPF*). Control variables are demographic variables as follows: (1) gender, (2) age, (3) tenure, (4) remote work experience, (5) education, (6) job level in the organisation and (7) personality; and an organisation-related variable, (8): the industry of the organisation in which the employee was working.

Table 4.1 provides descriptive statistics for the final sample, presenting the range and standard deviation of each variable within the model. Table 4.2 presents the Spearman correlation matrix, illustrating the relationships between variables in the model.

**Table 4.1: Descriptive statistics**

<i>VARIABLE</i>	N	Mean	SD	Min	Max	P25	Median	P75
<i>EPM_ST</i>	480	4.274	1.468	1.371	9.306	3.153	4.154	5.202
<i>SELFPF</i>	480	4.148	0.808	1.000	7.000	4.000	4.000	4.000
<i>BURNOUT</i>	480	3.136	1.047	1.000	6.625	2.375	3.188	3.938
<i>EXTCSR</i>	480	2.875	0.989	1.000	5.000	2.250	3.000	3.625
Gender	480	0.471	0.500	0.000	1.000	0.000	0.000	1.000
Age	480	37.371	10.942	18.000	71.000	29.000	36.000	44.000
Highest degree	480	2.142	0.681	1.000	4.000	2.000	2.000	3.000
Job level	480	0.385	0.487	0.000	1.000	0.000	0.000	1.000
Tenure	480	5.909	5.667	0.000	33.000	2.000	4.000	8.000
Remote month	480	18.270	7.307	3.000	48.000	12.000	22.000	24.000
Personality ( <i>P_EXTRA</i> )	480	2.757	1.099	1.000	5.000	2.000	2.500	3.500
Personality ( <i>P_AGREE</i> )	480	3.722	0.751	1.000	5.000	3.333	4.000	4.333
Personality ( <i>P_CONSCI</i> )	480	3.947	0.810	1.000	5.000	3.500	4.000	4.500
Personality ( <i>P_NEURO</i> )	480	2.801	1.079	1.000	5.000	2.000	2.500	3.500
Personality ( <i>P_OPEN</i> )	480	3.767	0.901	1.000	5.000	3.000	4.000	4.500

*Note:* *EPM\_ST* refers to the invasiveness of EPM. *SELFPF* represents employee performance. *BURNOUT* refers to employee burnout at work. *EXTCSR* refers to organisational practices that benefit the local community, the natural environment or consumers. Personality is measured in five dimensions: extraversion (*P\_EXTRA*), agreeableness (*P\_AGREE*), conscientiousness (*P\_CONSCI*), neuroticism (*P\_NEURO*) and openness (*P\_OPEN*). *WI* refers to employee-perceived workplace isolation. *Gender* is set at 1 if an employee is a male and 0 if she is a female. *Age* refers to the age of respondents, measured as the numeric value in years. *Job level* is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. *Tenure* refers to the work experience of an employee. *Highest degree* captures the highest education level of an employee and takes a value of 3 if an employee's highest degree is a master or higher degree; a value of 2 if an employee's highest degree is a bachelor degree; a value of 1 if an employee's highest degree is a graduate diploma; and a value of 0 if the highest degree of an employee is a high school degree or equivalent. This study computes a composite score based on the average of all items for each construct. Remote month refers to the cumulative number of months that employees worked remotely in the preceding 24 months.

**Table 4.2: The Spearman correlation matrix**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) <i>EPM_ST</i>	(0.871)														
(2) <i>SELFPF</i>	0.029	N/A													
(3) <i>BURNOUT</i>	0.091*	-0.250**	(0.834)												
(4) <i>EXTCSR</i>	0.092*	0.235**	-0.354**	(0.828)											
(5) <i>Gender</i>	0.064	0.038	-0.073	0.051	N/A										
(6) <i>Age</i>	-0.097*	0.032	-0.243**	0.025	-0.023	N/A									
(7) <i>Highest degree</i>	-0.073	0.045	-0.033	0.098*	-0.020	0.114*	N/A								
(8) <i>Job level</i>	0.142**	0.172**	-0.184**	0.207**	0.145**	0.182**	0.183**	N/A							
(9) <i>Tenure</i>	0.016	0.095*	-0.188**	0.144**	0.146**	0.453**	0.065	0.354**	N/A						
(10) <i>Remote month</i>	-0.123**	0.008	-0.052	-0.029	-0.076	0.215**	0.020	0.008	0.416**	N/A					
(11) <i>P_EXTRA</i>	0.046	0.114*	-0.208**	0.182**	0.079	0.091*	0.103*	0.226**	0.116*	0.015	(0.905)				
(12) <i>P_AGREE</i>	0.059	0.145**	-0.316**	0.174**	0.053	0.065	0.037	0.169**	0.054	-0.087	0.259**	(0.757)			
(13) <i>P_CONSCI</i>	0.117*	0.107*	-0.329**	0.210**	0.018	0.212**	0.101*	0.222**	0.178**	0.050	0.177**	0.279**	(0.864)		
(14) <i>P_NEURO</i>	-0.079	-0.138**	0.417**	-0.192**	-0.276**	-0.268**	-0.086	-0.347**	-0.287**	-0.023	-0.320**	-0.380**	-0.316**	(0.900)	
(15) <i>P_OPEN</i>	-0.043	0.041	0.021	0.012	-0.115*	0.054	-0.014	0.049	-0.005	-0.012	0.159**	0.029	0.056	-0.013	(0.828)

*Note:* *EPM\_ST* refers to the invasiveness of EPM; *SELFPF* represents employee performance. *BURNOUT* refers to employee burnout at work. *EXTCSR* refers to organisational practices that benefit the local community, the natural environment or consumers. Personality is measured in five dimensions: extraversion (*P\_EXTRA*), agreeableness (*P\_AGREE*), conscientiousness (*P\_CONSCI*), neuroticism (*P\_NEURO*) and openness (*P\_OPEN*). *Gender* is set at 1 if an employee is a male and 0 if she is a female. *Age* refers to the age of respondents, measured as the numeric value in years. *Job level* is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. *Tenure* refers to work experience. *Highest degree* captures the highest education level of an employee. *Remote month* refers to the remote work experience in the preceding 24 months. Square roots of AVEs are reported in parentheses as shown diagonally. \*, \*\*, \*\*\* represent two-tailed statistical significance of correlation at the 0.10, 0.05 and 0.01 levels, respectively.

#### 4.5.1 Assessment of the Structural Model

To assess the structural model, this study conducts a CFA for *EPM\_ST*, *EXTCSR*, *BURNOUT* and personality using the survey sample. Results are presented in Table 4.3. All items in the scales for variables have factor loadings higher than 0.50, and the composite reliabilities are higher than 0.60. The AVE is higher than 0.50. These results suggest that the scale's convergent validity is satisfactory (Chin 1998), providing strong support for the reliability and convergent validity of the model.

Specifically, results presented in Table 4.3 demonstrate that all items for *EXTCSR* load above the 0.7 threshold, explaining 73.5% of the total variance. Cronbach's alpha is 0.934, indicating high internal reliability of the scale (Nunnally 1978). Regarding the items for *BURNOUT*, Cronbach's alpha is 0.926, 0.852 and 0.847 for *BURN\_EX*, *BURN\_CY* and *BURN\_PE* respectively, suggesting that the *BURNOUT* scale has high construct validity.

**Table 4.3: Confirmatory factor analysis analysis—Combined factor loadings, composite reliability, Cronbach’s alpha and average variance extracted**

	Combined factor loading	Composite reliability	Cronbach’s alpha	Average variance extracted
EPM ST ( <i>EPM_ST</i> )		0.862	0.681	0.758
<i>SCOPE</i>	0.871			
<i>TARGET</i>	0.871			
External CSR activities ( <i>EXTCSR</i> )		0.946	0.934	0.686
<i>EXTCSR1</i>	0.830			
<i>EXTCSR2</i>	0.861			
<i>EXTCSR3</i>	0.864			
<i>EXTCSR4</i>	0.871			
<i>EXTCSR5</i>	0.777			
<i>EXTCSR6</i>	0.836			
<i>EXTCSR7</i>	0.735			
<i>EXTCSR8</i>	0.842			
Burnout ( <i>BURNOUT</i> )		0.872	0.776	0.696
Exhaustion ( <i>BURN_EX</i> )	0.852	0.946	0.926	0.776
<i>BURN_EX1</i>	0.919			
<i>BURN_EX2</i>	0.909			
<i>BURN_EX3</i>	0.746			
<i>BURN_EX4</i>	0.930			
<i>BURN_EX5</i>	0.888			
Cynicism ( <i>BURN_CY</i> )	0.919	0.897	0.852	0.643
<i>BURN_CY1</i>	0.870			
<i>BURN_CY2</i>	0.916			
<i>BURN_CY3</i>	0.545			
<i>BURN_CY4</i>	0.865			
<i>BURN_CY5</i>	0.756			
Professional efficacy ( <i>BURN_PE</i> )	0.719	0.888	0.847	0.571
<i>BURN_PE1</i>	0.627			
<i>BURN_PE2</i>	0.806			
<i>BURN_PE3</i>	0.802			
<i>BURN_PE4</i>	0.651			
<i>BURN_PE5</i>	0.828			
<i>BURN_PE6</i>	0.796			

Personality:				
Extraversion ( <i>P_EXTRA</i> )		0.901	0.780	0.820
<i>P_EXTRA1</i>	0.905			
<i>P_EXTRA2</i>	0.905			
Agreeableness ( <i>P_AGREE</i> )		0.801	0.628	0.574
<i>P_AGREE1</i>	0.740			
<i>P_AGREE2</i>	0.777			
<i>P_AGREE3</i>	0.755			
Conscientiousness ( <i>P_CONSCI</i> )		0.854	0.659	0.746
<i>P_CONSCI1</i>	0.864			
<i>P_CONSCI2</i>	0.864			
Neuroticism ( <i>P_NEURO</i> )		0.895	0.766	0.810
<i>P_NEURO1</i>	0.900			
<i>P_NEURO2</i>	0.900			
Personality: Openness ( <i>P_OPEN</i> )		0.813	0.541	0.685
<i>P_OPEN1</i>	0.828			
<i>P_OPEN2</i>	0.828			

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*Note:* AVE refers to average variance extracted. VIF refers to item's variance inflation factor. The VIF for each item is below 5, acceptable if under 5. High scores on exhaustion (*BURN\_EX*) and cynicism (*BURN\_CY*) and a low score on professional efficacy indicate high burnout. When calculating the overall score of *BURNOUT*, all items for professional efficacy (*BURN\_PE*) are reverse scored.

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This study uses two criteria—the HTMT ratio and the Fornell–Larcker criterion—to assess the discriminant validity of the measurement model. For the Fornell–Larcker criterion, the square root of the AVE for each construct should be greater than the correlation between constructs (Fornell and Larcker 1981). The HTMT ratio should be less than 0.90 (Henseler et al. 2015). The measurement model is examined using the PLS-SEM algorithm and a nonparametric bootstrapping routine with 5,000 samples. Results in Panel A of Table 4.4 show that all HTMT values are below 0.90. In Panel B, the square root of the AVE for each construct exceeds its inter-construct correlation, surpassing the Fornell–Larcker criterion. These findings collectively indicate satisfactory discriminant validity of the structural model.

**Table 4.4: Heterotrait–Monotrait ratios and correlations with constructs**

<i>Panel A: HTMT ratios</i>									
Constructs:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>EPM_ST</i> (1)	-								
<i>EXTCSR</i> (2)	0.161	-							
<i>BURNOUT</i> (3)	0.176	0.427							
<i>SELFPF</i> (4)	-	-	-						
<i>P_EXTRA</i> (5)	0.090	0.306	-	-					
<i>P_AGREE</i> (6)	0.087	0.458	-	0.370					
<i>P_CONSCI</i> (7)	0.191	0.465	-	0.251	0.448				
<i>P_NEURO</i> (8)	0.123	0.567	-	0.409	0.531	0.418			
<i>P_OPEN</i> (9)	0.103	0.114	-	0.283	0.197	0.090	0.086	-	
<i>Panel B: Correlations with constructs</i>									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>EPM_ST</i> (1)	(0.871)								
<i>EXTCSR</i> (2)	0.092*	(0.828)							
<i>BURNOUT</i> (3)	0.091*	-0.354**	(0.834)						
<i>SELFPF</i> (4)	0.029	0.235**	-0.250**	-					
<i>P_EXTRA</i> (5)	0.046	0.182**	-0.208**	0.114*	(0.905)				
<i>P_AGREE</i> (6)	0.059	0.174**	-0.316**	0.145**	0.259**	(0.757)			
<i>P_CONSCI</i> (7)	0.117*	0.210**	-0.329**	0.107*	0.177**	0.279**	(0.864)		
<i>P_NEURO</i> (8)	-0.079	-0.192**	0.417**	-0.138**	-0.320**	-0.380**	-0.316**	(0.900)	
<i>P_OPEN</i> (9)	-0.043	0.012	0.021	0.041	0.159**	0.029	0.056	-0.013	(0.828)

*Note:* HTMT refers to the heterotrait–monotrait ratio of correlations. *EPM\_ST* refers to the invasiveness of EPM; *EXTCSR* refers to organisational practices that benefit the local community, the natural environment or consumers. *SELFPF* represents employee performance. HTMT ratios are all below 0.90. Square roots of AVEs are reported in parentheses as shown diagonally. VIF refers to item’s variance inflation factor. VIFs < 2, acceptable if < 5. VIFs: *EPM\_ST* = 1.076; *EXTCSR* = 1.214; *SELFPF* = 1.126; *BURNOUT* = 1.550; *P\_EXTRA* = 1.200; *P\_AGREE* = 1.263; *P\_CONSCI* = 1.219; *P\_NEURO* = 1.422; *P\_OPEN* = 1.044. \*, \*\*, \*\*\* represent two-tailed statistical significance of correlation at the 0.10, 0.05 and 0.01 levels, respectively.

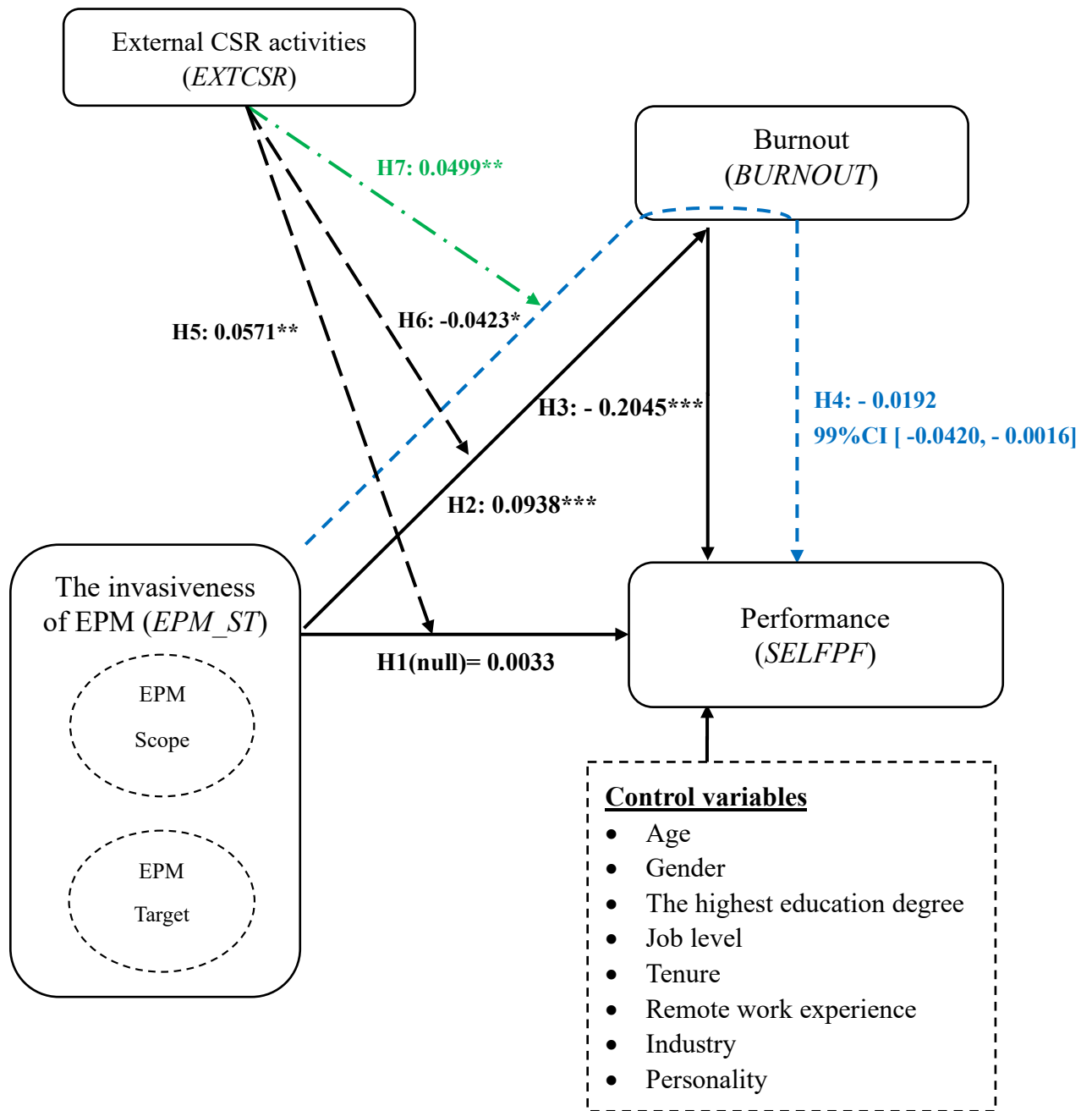
To examine the presence of multicollinearity in the structural model, the VIF of each construct is assessed. Following the approach of Chong and Wang (2019), a VIF value below 5 is considered acceptable for the constructs in the measurement model. The evaluation results presented in the note of Table 4.4 reveal that the VIFs for all constructs are below 2.0, which is far below the common cut-off threshold of 5 (Hair et al. 2010). Therefore, the conceptual model exhibits an acceptable level of multicollinearity among its constructs.

To assess the presence of common method bias, this study employs the Harman's one-factor test following the procedure outlined by Podsakoff and Organ (1986). All the key constructs in the model are included in a principal component analysis. The analysis indicates nine factors, each with eigenvalues greater than 1, and the cumulative variance accounts for 69.38% of the total variance. The first factor explains only 24.69% of the variance, indicating that no single factor dominates the explanation for most of the variance (Podsakoff and Organ 1986). Based on these results, this study concludes that common method bias is not a significant concern that could impact the results in this study.

#### **4.6 Test of Hypotheses**

This study employs PROCESS in SPSS version 4.0 to test the hypotheses. PROCESS enables this study to test hypotheses on the direct effect (H1–H3), mediation hypothesis (H4), moderating hypotheses (H5, H6) and moderated mediation hypothesis (H7). The structural model results are presented in Figure 4.2.

Figure 4.2: Path coefficients of the structural model



- > Direct effect: H1, H2, H3
- > Mediating effect: H4 (Scope and target –Burnout –Performance)
- > Moderating effect: H5 (EXTCSR on [Scope and target –Performance])
- > Moderating effect: H6 (EXTCSR on [Scope and target –Burnout])
- . - . - .> Moderated mediating effect: H7 ((EXTCSR on [Scope and target –Burnout –Performance])

#### 4.6.1 Test of Hypotheses: Direct Hypotheses

Table 4.5 summarises the results for the direct effect hypotheses, H1–H3. Results shown in Panel A of Table 4.5 indicate that the path coefficient for the relationship between *EPM\_ST* and *SELFPF* is positive but not statistically significant (coeff. = 0.0033, *p*-value = 0.8976), which supports H1 that there is no significant direct relationship between EPM ST and employee performance. Prior literature suggests that monitoring may affect employee performance by influencing working experience and increasing work-related stress (Ravid et al. 2023; Tarafdar et al. 2007). This study interprets the results of H1 together with the findings on H2–H4.

The findings presented in Panel A of Table 4.5 reveal a positive and statistically significant association between *EPM\_ST* and *BURNOUT*. The path coefficient is 0.0938, with a *p*-value of 0.0015. This result provides support for H2 that employees under high EPM ST are more likely to experience higher levels of burnout. In addition, the relationship between *BURNOUT* and employee performance is negative and statistically significant (coeff. = -0.2045, *p*-value = 0.0000). These findings support H3, suggesting that employees are more likely to exhibit lower performance when they perceive higher levels of burnout in the workplace.

**Table 4.5: Results of simple mediation effect (Mediator: *BURNOUT*)**

<i>Panel A: Direct effect (linear)</i>						
	Direct effect	SE	<i>t</i> -value	<i>p</i> -value		
H1: <i>EPM_ST</i> – <i>SELFPF</i>	0.0033	0.0258	0.1288	0.8976		
H2: <i>EPM_ST</i> – <i>BURNOUT</i>	0.0938	0.0294	3.1875	0.0015		
H3: <i>BURNOUT</i> – <i>SELFPF</i>	-0.2045	0.0399	-5.1281	0.0000		
<i>Panel B: Direct and indirect effect (PROCESS)- (mediator: BURNOUT)</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Total effect	0.0033	0.0258	0.1288	0.8976	-0.0634	0.0701
Direct effect: <i>EPM_ST</i> – <i>SELFPF</i>	0.0225	0.0254	0.8863	0.3759	-0.0432	0.0882
H4: Indirect effect: <i>EPM_ST</i> – <i>BURNOUT</i> – <i>SELFPF</i>	-0.0192	0.0077			-0.0420	-0.0016
<i>Panel C: Sobel test of indirect effect</i>						
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value		
H4: <i>EPM_ST</i> – <i>BURNOUT</i> – <i>SELFPF</i>	-0.0192	0.0071	-2.7086	0.0068		
<i>Panel D: Bootstrapping approach to indirect effect</i>						
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
H4: <i>EPM_ST</i> – <i>BURNOUT</i> – <i>SELFPF</i>	-0.0142	0.0092	-1.8220	0.0685	-0.0403	0.0073

*Notes:* LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error; *EPM\_ST* refers to the invasiveness of EPM; *SELFPF* refers to employee performance; *BURNOUT* refers to employee burnout at work and is measured as the average score for burnout combining exhaustion, cynicism and professional efficacy. Bootstrap sample size = 5,000.

#### 4.6.2 Test of Hypothesis: Mediating Hypothesis (Burnout)

H4 predicts that the relationship between EPM ST and employee performance will be mediated by employee burnout. Results are reported in Panel B of Table 4.5. Specifically, there are two effects involved: (1) a direct effect with a coefficient of 0.0225 ( $p$ -value = 0.3759) and (2) an indirect effect with a coefficient of  $-0.0192$  (99% CI  $[-0.0420, -0.0016]$ ). According to prior literature, full mediation occurs when there is a significant association between the independent variable and the mediating variable, and the mediating variable significantly influences the dependent variable even after accounting for the impact of the independent variable (Hayes 2018). The results presented in Panel A of Table 4.5 indicate that *EPM\_ST* is positively associated with *BURNOUT* (coeff. = 0.0938,  $p$ -value = 0.0015), and *BURNOUT* is negatively linked to *SELFPF* (coeff. =  $-0.2045$ ,  $p$ -value = 0.0000) after accounting for the effect of EPM ST. The coefficient between *EPM\_ST* and *SELFPF* with the mediator (*BURNOUT*) is statistically significant, at  $-0.0192$  (99% CI  $[-0.0420, -0.0016]$ ). These findings suggest that the relationship between EPM ST and employee performance is mediated by employee burnout, which supports H4.

This study further tests the robustness of the indirect effect using the Sobel test and the bootstrapping approach. The results from Panel C and D of Table 4.5 indicate a mediating role for employee burnout in the relationship between EPM ST and employee performance.

#### 4.6.3 Test of Hypotheses: Moderating Hypotheses (External CSR Activities)

This study uses Hayes's (2018) Model 8 to examine the moderating effects and moderated mediating effect of external CSR activities. H5 posits that external CSR activities moderates the direct association between EPM ST and employee performance.

The regression results in Panel B of Table 4.6 indicate that the conditional direct effect of *EPM\_ST* on *SELFPF* is not statistically significant across all three levels of *EXTCSR*, providing no support for H5.

H6 posits that the level of external CSR activities moderates the relationship between EPM ST and employee burnout. As shown in Panel A of Table 4.7, the interaction between *EPM\_ST* and *EXTCSR* is negative and marginally statistically significant ( $EPM\_ST \times EXTCSR = -0.0423$ ;  $p\text{-value} = 0.1007$ ). Further analysis, as shown in Panel B of Table 4.7, reveals that when external CSR activities are categorised into three levels, the conditional direct effect of EPM ST on employee burnout becomes insignificant (coeff. = 0.0681, 99% CI [-0.0247, 0.1610]) when employees work in organisations with a high level of external CSR activities. These results provide some support for H6 and indicate the importance of considering external CSR activities as a moderating factor in the relationship between EPM ST and employee burnout. These findings suggest that an organisation's external CSR activities can alleviate the negative effects of EPM ST on employee burnout.

**Table 4.6: Results for moderating effect of external CSR activities on the direct link between EPM ST and employee performance**

<i>Panel A: Regression results</i>						
	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI
<i>SELFPF regressed on:</i>						
Constant	3.6692	0.5208	7.0455	0.0000	2.3221	5.0163
<i>EPM_ST</i>	-0.1728	0.0741	-2.3337	0.0200	-0.3644	0.0187
<i>EXTCSR</i>	-0.1068	0.1072	-0.9963	0.3197	-0.3839	0.1704
<i>EPM_ST</i> × <i>EXTCSR</i>	0.0571	0.0233	2.4565	0.0144	-0.0030	0.1173
<i>Gender</i>	0.0260	0.0797	0.3262	0.7444	-0.1802	0.2321
<i>Age</i>	-0.0015	0.0039	-0.3988	0.6902	-0.0116	0.0085
<i>Highest degree</i>	0.0260	0.0549	0.4746	0.6353	-0.1159	0.1680
<i>Job level</i>	0.2072	0.0854	2.4255	0.0157	-0.0138	0.4281
<i>Tenure</i>	-0.0031	0.0078	-0.4048	0.6858	-0.0233	0.0170
<i>Remote month</i>	0.0048	0.0052	0.9231	0.3564	-0.0087	0.0183
Personality ( <i>P_EXTRA</i> )	0.0114	0.0361	0.3158	0.7523	-0.0820	0.1048
Personality ( <i>P_AGREE</i> )	0.0886	0.0539	1.6434	0.1010	-0.0509	0.2281
Personality ( <i>P_CONSCI</i> )	0.0501	0.0500	1.0004	0.3176	-0.0794	0.1795
Personality ( <i>P_NEURO</i> )	-0.0251	0.0416	-0.6035	0.5465	-0.1328	0.0826
Personality ( <i>P_OPEN</i> )	0.0343	0.0411	0.8346	0.4044	-0.0720	0.1406
Industry FE				Yes		
R-sq = 0.1231						

*Panel B: Conditional direct effects of EPM ST on employee performance at three levels of external CSR activities*

Direct effect: <i>EPM_ST</i> – <i>SELFPF</i>						
Moderator: <i>EXTCSR</i>	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI
-1 SD (1.8861)	-0.0651	0.0361	-1.8016	0.0723	-0.1586	0.0284
Mean (2.8747)	-0.0086	0.0255	-0.3381	0.7354	-0.0747	0.0574
+1 SD (3.8634)	0.0478	0.0325	1.4730	0.1414	-0.0362	0.1318

*Note:* LL: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5,000. *EPM\_ST* refers to the invasiveness of EPM; *SELFPF* refers to employee performance. *BURNOUT* refers to employee burnout at work and is measured as the average score for burnout combining exhaustion, cynicism and professional efficacy. *EXTCSR* is measured as the level of external CSR activities as a continuous variable using the summed mean values of the respective items. This study includes the following control variables: *Gender* refers to the gender of employees. *Age* refers to the age of respondents, measured as the numeric value in years. *Job level* is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. *Tenure* refers to the work experience of an employee. *Highest degree* captures the highest education level of an employee. *Remote Month* refers to the cumulative number of months that employees worked remotely in the preceding 24 months. Personality is measured in five dimensions: extraversion, agreeableness, conscientiousness, neuroticism and openness.

**Table 4.7: Results for moderating effect of external CSR activities on the direct link between EPM ST and employee burnout**

<i>Panel A: Regression results</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>BURNOUT regressed on:</i>						
Constant	3.5719	0.5757	6.2047	0.0000	2.0828	5.0610
<i>EPM_ST</i>	0.2315	0.0819	2.8275	0.0049	0.0197	0.4432
<i>EXTCSR</i>	-0.1125	0.1185	-0.9494	0.3429	-0.4189	0.1939
<i>EPM_ST</i> × <i>EXTCSR</i>	-0.0423	0.0257	-1.6450	0.1007	-0.1088	0.0242
<i>Gender</i>	0.0428	0.0881	0.4860	0.6272	-0.1851	0.2707
<i>Age</i>	-0.0121	0.0043	-2.8280	0.0049	-0.0232	-0.0010
<i>Highest degree</i>	0.0820	0.0607	1.3514	0.1772	-0.0749	0.2389
<i>Job level</i>	0.0026	0.0944	0.0273	0.9783	-0.2416	0.2468
<i>Tenure</i>	0.0011	0.0086	0.1270	0.8990	-0.0212	0.0233
Remote month	-0.0009	0.0058	-0.1620	0.8714	-0.0159	0.0140
Personality ( <i>P_EXTRA</i> )	-0.0573	0.0399	-1.4361	0.1517	-0.1606	0.0459
Personality ( <i>P_AGREE</i> )	-0.1311	0.0596	-2.1992	0.0284	-0.2853	0.0231
Personality ( <i>P_CONSCI</i> )	-0.1708	0.0553	-3.0871	0.0021	-0.3139	-0.0277
Personality ( <i>P_NEURO</i> )	0.2685	0.0460	5.8327	0.0000	0.1494	0.3876
Personality ( <i>P_OPEN</i> )	0.0580	0.0454	1.2778	0.2020	-0.0594	0.1755
Industry FE				Yes		
R-sq = 0.3623						
<i>Panel B: Conditional direct effects of EPM ST on employee burnout at three levels of external CSR activities</i>						
Direct effect: <i>EPM_ST</i> – <i>BURNOUT</i>						
Moderator: <i>EXTCSR</i>	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
-1 SD (1.8861)	0.1517	0.0399	3.7985	0.0002	0.0484	0.2551
Mean (2.8747)	0.1099	0.0282	3.8953	0.0001	0.0369	0.1829
+1 SD (3.8634)	0.0681	0.0359	1.8978	0.0584	-0.0247	0.1610
<p><i>Note:</i> LL: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5,000. <i>EPM_ST</i> refers to the invasiveness of EPM; <i>BURNOUT</i> refers to employee burnout, which is characterised by exhaustion, cynicism and reduced professional efficacy. <i>EXTCSR</i> is measured as the level of external CSR activities as a continuous variable using the summed mean values of the respective items. This study includes the following control variables: <i>Gender</i> refers to the gender of employees. <i>Age</i> refers to the age of respondents, measured as the numeric value in years. <i>Job level</i> is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. <i>Tenure</i> refers to the work experience of an employee. <i>Highest degree</i> captures the highest education level of an employee. <i>Remote Month</i> refers to the cumulative number of months that employees worked remotely in the preceding 24 months. Personality is measured in five dimensions: extraversion, agreeableness, conscientiousness, neuroticism and openness.</p>						

In this study, H7 proposes that the extent of external CSR activities moderates the indirect relationship between EPM ST and employee performance through the mediating factor of burnout. The regression results in Panel A of Table 4.8 show that the coefficient of the interaction between EPM ST and external CSR activities is positive and statistically significant ( $EPM\_ST \times EXTCSR = 0.0499$ ,  $p$ -value = 0.0300). From Panel B of Table 4.8, when the organisation has a high level of external CSR activities, the direct effect of EPM ST on employee performance via employee burnout becomes statistically insignificant (coeff. =  $-0.0116$ ; 99% CI [ $-0.0332$ ,  $0.0036$ ]).

The analysis in Panel B of Table 4.8 also generates an index of moderated mediation (coeff. =  $0.0072$ ; 99% CI [ $-0.0037$ ,  $0.0237$ ]). While this index is not statistically significant, the results regarding the conditional effect of EPM ST on the indirect relationship demonstrate the moderating effect of external CSR activities. When the model considers the organisation's external CSR activities, the coefficients of the indirect effect of *EPM\_ST* on *SELFPF* through *BURNOUT* are reduced. These findings suggest that the indirect effect is weakened by the organisation's external CSR activities, and this moderated effect becomes stronger for organisations with a higher level of external CSR activities. Overall, these results support H7, revealing that organisations that engage in high levels of external CSR activities are more effective at reducing the indirect effects of EPM ST on employee performance through burnout. This finding suggests that organisations could reasonably invest in external CSR initiatives that positively impact external stakeholders, as these activities have functions in mitigating the negative consequences of EPM ST on employee performance.

**Table 4.8: Results for moderated mediation effect of external CSR activities on the indirect link between EPM ST and employee performance via burnout**

<i>Panel A: Regression results</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>SLELFPF regressed on:</i>						
Constant	4.2769	0.5332	8.0206	0.0000	2.8975	5.6562
<i>EPM_ST</i>	-0.1335	0.0735	-1.8169	0.0699	-0.3235	0.0565
<i>BURNOUT</i>	-0.1701	0.0417	-4.0840	0.0001	-0.2779	-0.0624
<i>EXTCSR</i>	-0.1259	0.1055	-1.1936	0.2332	-0.3987	0.1469
<i>EPM_ST</i> × <i>EXTCSR</i>	0.0499	0.0229	2.1773	0.0300	-0.0094	0.1092
<i>Gender</i>	0.0333	0.0784	0.4246	0.6714	-0.1695	0.2360
<i>Age</i>	-0.0036	0.0039	-0.9383	0.3486	-0.0136	0.0063
<i>Highest degree</i>	0.0400	0.0541	0.7396	0.4599	-0.0999	0.1799
<i>Job level</i>	0.2076	0.0840	2.4721	0.0138	-0.0096	0.4248
<i>Tenure</i>	-0.0030	0.0077	-0.3874	0.6986	-0.0228	0.0168
<i>Remote month</i>	0.0047	0.0051	0.9079	0.3644	-0.0086	0.0180
Personality ( <i>P_EXTRA</i> )	0.0017	0.0356	0.0464	0.9630	-0.0904	0.0937
Personality ( <i>P_AGREE</i> )	0.0663	0.0533	1.2442	0.2141	-0.0716	0.2042
Personality ( <i>P_CONSCI</i> )	0.0210	0.0497	0.4227	0.6727	-0.1076	0.1496
Personality ( <i>P_NEURO</i> )	0.0205	0.0424	0.4840	0.6286	-0.0892	0.1303
Personality ( <i>P_OPEN</i> )	0.0442	0.0405	1.0912	0.2757	-0.0605	0.1489
Industry FE				Yes		
R-sq = 0.1541						
<i>Panel B: Conditional indirect effects of EPM ST on employee performance through burnout at three levels of external CSR activities</i>						
Indirect: <i>EPM_ST</i> – <i>BURNOUT</i> – <i>SELFPF</i>						
Moderator: <i>EXTCSR</i>	Coefficient	Bootstrap SE	LL 99% CI	UL 99% CI		
-1 SD (1.8861)	-0.0258	0.0105	-0.0582	-0.0047		
Mean (2.8747)	-0.0187	0.0072	-0.0411	-0.0040		
+1 SD (3.8634)	-0.0116	0.0066	-0.0332	0.0036		
Index of moderated mediation:	Index	Bootstrap SE	LL 99% CI	UL 99% CI		
<i>EXTCSR</i>	0.0072	0.0051	-0.0037	0.0237		
<i>Note:</i> lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5,000. <i>EPM_ST</i> refers to the invasiveness of EPM; <i>SELFPF</i> refers to employee performance. <i>BURNOUT</i> refers to employee burnout. <i>EXTCSR</i> is measured as the level of external CSR activities as a continuous variable using the summed mean values of the respective items. This study includes the following control variables: <i>Gender</i> refers to the gender of employees. <i>Age</i> refers to the age of employees. <i>Job level</i> is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. <i>Tenure</i> refers to the work experience of an employee. <i>Highest degree</i> captures the highest education level of an employee. <i>Remote Month</i> refers to the cumulative number of months that employees worked remotely in the preceding 24 months. Personality is measured in five dimensions: extraversion, agreeableness, conscientiousness, neuroticism and openness.						

#### 4.6.4 Robustness Tests

To ensure the robustness of the findings, this study re-evaluates all the models used in the main tests for each hypothesis, employing alternative measures for both EPM ST and external CSR activities. First, alternative measures for EPM ST are employed, specifically by evaluating it with either EPM target or EPM scope. Second, this study uses alternative measures of organisational external CSR activities. The main test measures external CSR activities as a continuous variable captured by a 5-point Likert scale ranging from 1 to 5. In the robustness test, this study measures organisational external CSR activities through a dummy variable (*EXTCSR\_D*) using the mean value as the cut-off. Third, this study investigates the mechanisms through which burnout occurs in the context of EPM by using each dimension of burnout as the measure of burnout; that is, emotional exhaustion, cynicism and reduced professional efficacy.

##### 4.6.4.1 Measuring EPM ST Using EPM Scope

The results are summarised in Table 4.9 and are consistent with the main tests. As shown in Panel A and B of Table 4.9, a positive and statistically significant relationship is observed between *SCOPE* and *BURNOUT* (coeff. = 0.0991, *p*-value = 0.0100). Given that EPM scope is a crucial component of EPM ST, this result suggests that employees monitored by a wider range of monitoring techniques are more likely to experience higher levels of burnout, supporting H2. In addition, the negative and statistically significant relationship between employee burnout and performance persists after accounting for the effect of EPM scope, suggesting that the relationship between EPM scope and employee performance is mediated by employee burnout, supporting H4.

The moderation results are detailed in Panel C–G of Table 4.9. In particular, results shown in Panel F indicate that when external CSR activities are categorised into three levels, the conditional direct effect of the scope of EPM on employee burnout becomes insignificant (coeff. = 0.0585, 99%CI [–0.0642, 0.1812]) when employees work in organisations with a high level of external CSR activities. This result suggests that organisations engaging in extensive external CSR activities are more likely to see the effects of EPM ST on employee burnout and performance become less pronounced, which supports H6 that external CSR activities negatively moderate the relationship between EPM ST and employee burnout.

Further, Panel H of Table 4.9 reports that the coefficients of the indirect effect of *SCOPE* on *SELFPF* via *BURNOUT* decrease when the model considers the organisations' external CSR activities. These findings suggest that the indirect effect is weakened by organisations' external CSR activities, and this moderated effect becomes stronger for organisations with a higher level of external CSR activities, supporting H7.

**Table 4.9: Summary of results when measuring EPM ST using EPM scope**

Panel A: Direct effect							
		Direct effect	SE	t-value	p-value		
H1:	<i>SCOPE –SELFPF</i>	0.0118	0.0335	0.3523	0.7248		
H2:	<i>SCOPE –BURNOUT</i>	0.0991	0.0383	2.5866	0.0100		
H3:	<i>BURNOUT –SELFPF</i>	-0.2039	0.0397	-5.1341	0.0000		
Panel B: Direct and indirect effect (mediator: BURNOUT)							
		Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI
	Total effect	0.0118	0.0335	0.3523	0.7248	-0.0748	0.0984
	Direct effect: <i>SCOPE –SELFPF</i>	0.0320	0.0328	0.9753	0.3299	-0.0529	0.1169
H4:	Indirect effect: <i>SCOPE – BURNOUT –SELFPF</i>	-0.0202	0.0094			-0.0508	0.0001
Panel C: Partial regression results (the impact of SCOPE and EXTCSR on employee performance)							
	<i>SELFPF</i> regressed on:	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI
	<i>SCOPE</i>	-0.2244	0.0920	-2.4377	0.0152	-0.4624	0.0137
	<i>EXTCSR</i>	-0.1012	0.1001	-1.0106	0.3127	-0.3603	0.1578
	<i>SCOPE × EXTCSR</i>	0.0762	0.0293	2.5989	0.0097	0.0004	0.1520
Panel D: Conditional direct effects of SCOPE on employee performance at three levels of EXTCSR							
Direct effect: <i>SCOPE –SELFPF</i>							
	Moderator: <i>EXTCSR</i>	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI
	-1 SD (1.8861)	-0.0807	0.0450	-1.7907	0.0740	-0.1972	0.0359
H5:	Mean (2.8747)	-0.0053	0.0331	-0.1613	0.8719	-0.0909	0.0803
	+1 SD (3.8634)	0.0700	0.0429	1.6312	0.1035	-0.0410	0.1810
Panel E: Partial Regression results (the impact of SCOPE and EXTCSR on employee burnout)							
	<i>BURNOUT</i> regressed on:	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI
	<i>SCOPE</i>	0.3429	0.1018	3.3701	0.0008	0.0797	0.6061
	<i>EXTCSR</i>	-0.0695	0.1107	-0.6279	0.5304	-0.3559	0.2169
	<i>SCOPE × EXTCSR</i>	-0.0736	0.0324	-2.2715	0.0236	-0.1575	0.0102
Panel F: Conditional direct effects of SCOPE on employee burnout at three levels of EXTCSR							
Direct effect: <i>SCOPE –BURNOUT</i>							
	Moderator: <i>EXTCSR</i>	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI
	-1 SD (1.8861)	0.2041	0.0498	4.0976	0.0000	0.0753	0.3329
H6:	Mean (2.8747)	0.1313	0.0366	3.5886	0.0004	0.0367	0.2259
	+1 SD (3.8634)	0.0585	0.0474	1.2332	0.2181	-0.0642	0.1812
Panel G: Partial regression results (the impact of SCOPE, EXTCSR and burnout on employee performance)							
	<i>SELFPF</i> regressed on:	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI
	<i>SCOPE</i>	-0.1671	0.0917	-1.8228	0.0690	-0.4042	0.0700
	<i>BURNOUT</i>	-0.1670	0.0417	-4.0064	0.0001	-0.2748	-0.0592
	<i>EXTCSR</i>	-0.1128	0.0986	-1.1445	0.2530	-0.3678	0.1422
	<i>SCOPE × EXTCSR</i>	0.0639	0.0290	2.2029	0.0281	-0.0111	0.1389

*Panel H: Conditional indirect effects of SCOPE on employee performance through burnout at three levels of EXTCSR*

Indirect: *SCOPE* – *BURNOUT* – *SELFPF*

Moderator: <i>EXTCSR</i>	Coefficient	Bootstrap SE	LL 99% CI	UL 99% CI
-1 SD (1.8861)	-0.0341	0.0129	-0.0756	-0.0080
Mean (2.8747)	-0.0219	0.0085	-0.0497	-0.0048
+1 SD (3.8634)	-0.0098	0.0078	-0.0348	0.0095

H7:

Index of moderated mediation:	Index	Bootstrap SE	LL 99% CI	UL 99% CI
<i>EXTCSR</i>	0.0123	0.0064	-0.0011	0.0318

Notes: LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error; *SELFPF* refers to employee performance. *SCOPE* refers to the scope of EPM; *BURNOUT* refers to employee burnout; *EXTCSR* is measured as the level of external CSR activities as a continuous variable using the summed mean values of the respective items. Bootstrap sample size = 5,000. Full result tables are reported in Appendix E Table 4.17–4.20.

#### 4.6.4.2 Measuring EPM ST Using EPM Target

This study alternatively uses EPM target (*TARGET*) to assess of EPM ST. The results summarised in Table 4.10 support the main results. As shown in Table 4.10, there is a positive and statistically significant relationship between *TARGET* and *BURNOUT*, suggesting that EPM targeting a greater number of information categories is linked to heightened employee burnout. Results in Panel B also indicate that the positive relationship between EPM target and employee performance is negatively mediated by employee burnout. These results provide supporting evidence for H2–H4. Moreover, results reported in Panel C–H in Table 4.10 provide robust evidence that the indirect effect of EPM ST is weakened by organisations’ external CSR activities, and this moderated effect is stronger for organisations with a higher level of external CSR activities, supporting H7.

The examination of an alternative measurement approach for EPM ST, using either EPM scope or EPM target, reveals that the main analyses are not driven by specific aspects of EPM ST. EPM scope or EPM target collectively affect employee burnout and performance, with the possibility of moderation by external CSR activities undertaken by the organisation.

**Table 4.10: Summary of results when measuring EPM ST using EPM target**

Panel A: Direct effect							
	Direct effect	SE	t-value	p-value			
H1:	<i>TARGET</i> – <i>SELFPF</i>	-0.0008	0.0212	-0.0386	0.9692		
H2:	<i>TARGET</i> – <i>BURNOUT</i>	0.0704	0.0242	2.9085	0.0038		
H3:	<i>BURNOUT</i> – <i>SELFPF</i>	-0.2027	0.0398	-5.0916	0.0000		
Panel B: Direct and indirect effect (mediator: <i>BURNOUT</i> )							
	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI	
	Total effect	-0.0008	0.0212	-0.0386	0.9692	-0.0556	0.0539
	Direct effect: <i>TARGET</i> – <i>SELFPF</i>	0.0134	0.0208	0.6464	0.5183	-0.0404	0.0673
H4:	Indirect effect: <i>TARGET</i> – <i>BURNOUT</i> – <i>SELFPF</i>	-0.0143	0.0058			-0.0315	-0.0016
Panel C: Partial regression results (the impact of <i>TARGET</i> and <i>EXTCSR</i> on employee performance)							
<i>SELFPF</i> regressed on:	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI	
<i>TARGET</i>	-0.1181	0.0640	-1.8456	0.0656	-0.2836	0.0474	
<i>EXTCSR</i>	-0.0305	0.0961	-0.3175	0.7510	-0.2791	0.2181	
<i>TARGET</i> × <i>EXTCSR</i>	0.0389	0.0202	1.9221	0.0552	-0.0134	0.0913	
Panel D: Conditional direct effects of <i>TARGET</i> on employee performance at three levels of <i>EXTCSR</i>							
Direct effect: <i>TARGET</i> – <i>SELFPF</i>							
Moderator: <i>EXTCSR</i>	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI	
-1 SD (1.8861)	-0.0447	0.0305	-1.4642	0.1438	-0.1237	0.0343	
H5: Mean (2.8747)	-0.0063	0.0210	-0.2985	0.7654	-0.0605	0.0480	
+1 SD (3.8634)	0.0322	0.0273	1.1777	0.2395	-0.0385	0.1029	
Panel E: Partial regression results (the impact of <i>TARGET</i> and <i>EXTCSR</i> on employee burnout)							
<i>BURNOUT</i> regressed on:	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI	
<i>TARGET</i>	0.1248	0.0710	1.7569	0.0796	-0.0589	0.3085	
<i>EXTCSR</i>	-0.2105	0.1067	-1.9729	0.0491	-0.4865	0.0655	
<i>TARGET</i> × <i>EXTCSR</i>	-0.0175	0.0225	-0.7799	0.4358	-0.0756	0.0406	
Panel F: Conditional direct effects of <i>TARGET</i> on employee burnout at three levels of <i>EXTCSR</i>							
Direct effect: <i>TARGET</i> – <i>BURNOUT</i>							
Moderator: <i>EXTCSR</i>	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI	
-1 SD (1.8861)	0.0917	0.0339	2.7060	0.0071	0.0040	0.1794	
H6: Mean (2.8747)	0.0744	0.0233	3.1969	0.0015	0.0142	0.1346	
+1 SD (3.8634)	0.0571	0.0303	1.8815	0.0605	-0.0214	0.1356	
Panel G: Partial regression results (the impact of <i>TARGET</i> , <i>EXTCSR</i> and burnout on employee performance)							
<i>SELFPF</i> regressed on:	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI	
<i>TARGET</i>	-0.0965	0.0631	-1.5302	0.1267	-0.2597	0.0666	
<i>BURNOUT</i>	-0.1728	0.0414	-4.1692	0.0000	-0.2800	-0.0656	
<i>EXTCSR</i>	-0.0669	0.0948	-0.7053	0.4810	-0.3122	0.1784	
<i>TARGET</i> × <i>EXTCSR</i>	0.0359	0.0199	1.8029	0.0721	-0.0156	0.0873	

*Panel H: Conditional indirect effects of TARGET on employee performance through burnout at three levels of EXTCSR*

Indirect: *TARGET* – *BURNOUT* – *SELFPF*

Moderator: <i>EXTCSR</i>	Coefficient	Bootstrap SE	LL 99% CI	UL 99% CI
-1 SD (1.8861)	-0.0159	0.0082	-0.0438	0.0004
Mean (2.8747)	-0.0129	0.0056	-0.0302	-0.0014
+1 SD (3.8634)	-0.0099	0.0057	-0.0274	0.0029
H7:				
Index of moderated mediation: <i>EXTCSR</i>	Index	Bootstrap SE	LL 99% CI	UL 99% CI
	0.0030	0.0044	-0.0074	0.0175

Notes: LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error; *SELFPF* refers to employee performance; *TARGET*: the target of EPM; *BURNOUT* refers to employee burnout; *EXTCSR* is measured as the level of external CSR activities as a continuous variable using the summed mean values of the respective items. Bootstrap sample size = 5,000. Full result tables are presented in Appendix E Table 4.21–Table 4.24.

#### 4.6.4.3 Measuring External CSR Activities Using a Dummy Variable

This study alternatively employs a dummy variable, *EXTCSR\_D*, to measure the level of external CSR activities, using the mean value as the cut-off. Specifically, *EXTCSR\_D* is coded as 1 if the value for external CSR activity level equals or exceeds the mean value of external CSR activity level across the sample; otherwise, it is coded as 0. A summary of results is presented in Table 4.11. According to the findings in Table 4.11, this study's consistent results align with the main findings, indicating that the direct relationship between EPM ST and employee burnout is negatively moderated by organisational external CSR activities. As shown in Panel F of Table 4.11, the indirect effect of EPM ST on employee performance via burnout becomes less pronounced in organisations with high levels of external CSR activities (coeff. = -0.0147; 99% CI [-0.0378, 0.0033]). This provides robustness evidence for H7, supporting that the indirect relationship between EPM ST and employee performance via a mediation path of burnout is moderated by the level of an organisation's external CSR activities.

**Table 4.11: Summary of results when measuring external CSR activities using a dummy variable**

Panel A: Partial regression results (the impact of EPM ST and EXTCSR on employee performance)						
<i>SELFPF</i> regressed on:	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>EPM_ST</i>	-0.0561	0.0387	-1.4506	0.1476	-0.1562	0.0439
<i>EXTCSR</i>	-0.2371	0.2285	-1.0375	0.3001	-0.8282	0.3540
<i>EPM_ST</i> × <i>EXTCSR_D</i>	0.1012	0.0506	1.9978	0.0463	-0.0298	0.2321
Panel B: Conditional direct effects of EPM ST on employee performance at two levels of EXTCSR						
Direct effect: <i>EPM_ST</i> – <i>SELFPF</i>						
Moderator: <i>EXTCSR</i>	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
H5: Low SD (0.0000)	-0.0561	0.0387	-1.4506	0.1476	-0.1562	0.0439
High SD (1.0000)	0.0450	0.0335	1.3453	0.1792	-0.0416	0.1316
Panel C: Partial regression results (the impact of EPM ST and EXTCSR on employee burnout)						
<i>BURNOUT</i> regressed on:	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>EPM_ST</i>	0.1221	0.0434	2.8148	0.0051	0.0099	0.2344
<i>EXTCSR_D</i>	-0.2474	0.2563	-0.9650	0.3351	-0.9104	0.4157
<i>EPM_ST</i> × <i>EXTCSR_D</i>	-0.0437	0.0568	-0.7695	0.4420	-0.1906	0.1032
Panel D: Conditional direct effects of EPM ST on employee burnout at two levels of EXTCSR						
Direct effect: <i>EPM_ST</i> – <i>BURNOUT</i>						
Moderator: <i>EXTCSR_D</i>	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
H6: Low SD (0.0000)	0.1221	0.0434	2.8148	0.0051	0.0099	0.2344
High SD (1.0000)	0.0784	0.0376	2.0886	0.0373	-0.0187	0.1756
Panel E: Partial regression results (the impact of EPM ST, EXTCSR and burnout on employee performance)						
<i>SELFPF</i> regressed on:	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>EPM_ST</i>	-0.0332	0.0382	-0.8686	0.3855	-0.1319	0.0656
<i>BURNOUT</i>	-0.1879	0.0409	-4.5988	0.0000	-0.2936	-0.0822
<i>EXTCSR_D</i>	-0.2835	0.2239	-1.2667	0.2059	-0.8626	0.2955
<i>EPM_ST</i> × <i>EXTCSR_D</i>	0.0929	0.0496	1.8745	0.0615	-0.0353	0.2212
Panel F: Conditional indirect effects of EPM ST on employee performance through burnout at two levels of EXTCSR						
Indirect: <i>EPM_ST</i> – <i>BURNOUT</i> – <i>SELFPF</i>						
Moderator: <i>EXTCSR_D</i>	Coefficient	Bootstrap SE			LL 99% CI	UL 99% CI
Low SD (0.0000)	-0.0229	0.0108			-0.0574	-0.0008
High SD (1.0000)	-0.0147	0.0077			-0.0378	0.0033
H7:						
Index of moderated mediation:	Index	Bootstrap SE			LL 99% CI	UL 99% CI
<i>EXTCSR_D</i>	0.0082	0.0113			-0.0189	0.0417

Notes: LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error; *SELFPF* refers to employee performance; *EPM\_ST* refers to the invasiveness of EPM; *BURNOUT* refers to employee burnout; *EXTCSR\_D* is measured as the level of external CSR activities as a dummy variable using the mean as the cut-off. Bootstrap sample size = 5,000. Full result tables are provided in Appendix E Table 4.25–4.27.

#### 4.6.4.4 Measuring Employee Burnout Through Three Dimensions

Prior psychological literature indicates that employee burnout is characterised by exhaustion, cynicism and reduced professional efficacy (Crawford et al. 2010; Maslach and Leiter 2008). Certain dimensions of burnout have a closer relationship with job characteristics such as monitoring conditions, which may have a greater impact on employee perceptions of job demands and job resources, thereby affecting employee performance. For instance, Van den Broeck et al. (2008) suggest that exhaustion and cynicism, in particular, are positively associated with job demands such as work overload, emotional demands and work–home interference; and negatively correlated with job resources such as autonomy, social support and opportunities for professional development.

To further examine the mechanisms by which burnout occurs in the context of EPM, this study re-estimates Hayes’s (2018) Model 8 to examine the moderating effects of external CSR activities using each dimension of burnout as the measure of burnout. This analysis allows for a more comprehensive understanding of how different dimensions of burnout may interact with external CSR activities in influencing employee performance. Specifically, this study uses exhaustion (*BURN\_EX*), cynicism (*BURN\_CY*) and reduced professional efficacy (*BURN\_PE*)<sup>35</sup> to test the robustness of the moderating effects of external CSR activities on the direct or indirect relationship between EPM ST and employee burnout and performance. High scores for *BURN\_EX*, *BURN\_CY* and *BURN\_PE* indicate high burnout (Demerouti et al. 2003). A summary of simple mediation effect results is presented in Table 4.12.

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<sup>35</sup> *BURN\_PE* is measured as the unreversed score of employees’ professional efficacy, indicating reduced professional efficacy. Therefore, high scores for exhaustion (*BURN\_EX*), cynicism (*BURN\_CY*) and reduced professional efficacy (*BURN\_PE*) indicate high burnout.

Results shown in Panel A–C of Table 4.12 suggest that the impact of EPM ST on employee burnout primarily manifests as increased feelings of exhaustion and cynicism, while its effect on employees' feelings of accomplishment is not statistically significant. This result is consistent with Van den Broeck et al.'s (2008) finding that, compared with reduced professional efficacy, employee exhaustion and cynicism have a greater impact on employee-perceived job demands and resources, which could lead to a more pronounced impact on employee performance. The burnout dimensions are negatively associated with employee performance—exhaustion (coeff. =  $-0.1026$ ,  $p$ -value =  $0.0002$ ), cynicism (coeff. =  $-0.1463$ ,  $p$ -value =  $0.0000$ ) and reduced professional efficacy (coeff. =  $-0.1514$ ,  $p$ -value =  $0.0008$ )—consistent with research (Bakker et al. 2014; Maslach and Leiter 2016) showing that employees are more likely to have lower performance when they perceive higher levels of burnout. In addition, the results presented in Panel D–F of Table 4.12 indicate that the mediating role of employees' feelings of exhaustion and cynicism significantly contributes to mediating the relationship between EPM ST and employee performance.

**Table 4.12: Summary of results of simple mediation effect (Mediator: employee burnout dimensions)**

Panel A: Direct effect (linear) - <i>BURN_EX</i> (emotional exhaustion)						
	Direct effect	SE	<i>t</i> -value	<i>p</i> -value		
H1: <i>EPM_ST</i> – <i>SELFPF</i>	0.0033	0.0258	0.1288	0.8976		
H2: <i>EPM_ST</i> – <i>BURN_EX</i>	0.1756	0.0430	4.0791	0.0001		
H3: <i>BURN_EX</i> – <i>SELFPF</i>	-0.1026	0.0276	-3.7146	0.0002		
Panel B: Direct effect (linear) - <i>BURN_CY</i> (cynicism)						
	Direct effect	SE	<i>t</i> -value	<i>p</i> -value		
H1: <i>EPM_ST</i> – <i>SELFPF</i>	0.0033	0.0258	0.1288	0.8976		
H2: <i>EPM_ST</i> – <i>BURN_CY</i>	0.1407	0.0411	3.4193	0.0007		
H3: <i>BURN_CY</i> – <i>SELFPF</i>	-0.1463	0.0285	-5.1257	0.0000		
Panel C: Direct effect (linear) - <i>BURN_PE</i> (professional efficacy)						
	Direct effect	SE	<i>t</i> -value	<i>p</i> -value		
H1: <i>EPM_ST</i> – <i>SELFPF</i>	0.0033	0.0258	0.1288	0.8976		
H2: <i>EPM_ST</i> – <i>BURN_PE</i>	-0.0133	-0.0201	-0.4990	0.6181		
H3: <i>BURN_PE</i> – <i>SELFPF</i>	-0.1514	-0.1822	-3.3890	0.0008		
Panel D: Direct and indirect effect - (mediator: <i>BURN_EX</i> )						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Total effect	0.0033	0.0258	0.1288	0.8976	-0.0634	0.0701
Direct effect: <i>EPM_ST</i> – <i>SELFPF</i>	0.0213	0.0259	0.8238	0.4105	-0.0457	0.0884
H4: Indirect effect: <i>EPM_ST</i> – <i>BURN_EX</i> – <i>SELFPF</i>	-0.0180	0.0070			-0.0399	-0.0035
Panel E: Direct and indirect effect - (mediator: <i>BURN_CY</i> )						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Total effect	0.0033	0.0258	0.1288	0.8976	-0.0634	0.0701
Direct effect: <i>EPM_ST</i> – <i>SELFPF</i>	0.0239	0.0254	0.9394	0.3480	-0.0419	0.0897
H4: Indirect effect: <i>EPM_ST</i> – <i>BURN_CY</i> – <i>SELFPF</i>	-0.0206	0.0073			-0.0429	-0.0046
Panel F: Direct and indirect effect - (mediator: <i>BURN_PE</i> )						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Total effect	0.0033	0.0258	0.1288	0.8976	-0.0634	0.0701
Direct effect: <i>EPM_ST</i> – <i>SELFPF</i>	0.0013	0.0255	0.0513	0.9591	-0.0647	0.0673
H4: Indirect effect: <i>EPM_ST</i> – <i>BURN_PE</i> – <i>SELFPF</i>	0.0020	0.0047			-0.0103	0.0166

Notes: LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error; *EPM\_ST* refers to the invasiveness of EPM; *SELFPF* refers to employee performance; *BURN\_EX*: exhaustion; *BURN\_CY*: cynicism; *BURN\_PE*: reduced professional efficacy. Bootstrap sample size = 5,000. High scores for exhaustion (*BURN\_EX*), cynicism (*BURN\_CY*) and reduced professional efficacy (*BURN\_PE*) indicate high burnout.

A summary of results regarding the moderating effect of organisational external CSR activities is provided in Table 4.13. Consistent with the main findings in Table 4.7, the interaction between *EPM\_ST* and *EXTCSR* is negative and statistically significant, indicating an overall moderating effect for external CSR activities on the direct relationship between EPM ST and employee exhaustion (see results in Panel A and B in Table 4.13). Further, organisations' external CSR activities are categorised into three levels, the coefficient representing the direct effect of *EPM\_ST* on employee exhaustion and cynicism weakens, and even becomes statistically insignificant, particularly in organisations with a high level of external CSR activities. Panel C and D also show a moderating effect for external CSR activities on the indirect link between EPM ST and employee performance through employee burnout. Results suggest that external CSR activities are effective in mitigating the negative impact of EPM ST on employee exhaustion and cynicism.

The above results suggest that the moderating effect of external CSR activities on the indirect relationship between EPM ST and employee performance is more pronounced through emotional exhaustion and cynicism, compared to the diminished professional efficacy. This information may be valuable for organisations and practitioners in designing interventions and strategies to effectively address and manage the negative consequences of EPM ST on employee wellbeing and performance.

**Table 4.13: Summary of results of the moderating effect of organisational external CSR activities**

<i>Panel A: Partial regression results (the impact of EPM ST and EXTCSR on employee burnout dimensions)</i>			
<i>Burnout dimension regressed on:</i>	<i>Burnout dimensions</i>		
	<i>BURN_EX</i>	<i>BURN_EX</i>	<i>BURN_EX</i>
<i>EPM_ST</i>	0.4277***	0.2653**	0.0398
<i>EXTCSR</i>	0.0711	-0.2089	-0.1851*
<i>EPM_ST</i> × <i>EXTCSR</i>	-0.0808**	-0.0370	-0.0146
<i>Panel B: Conditional direct effects of EPM ST on employee burnout dimensions at three levels of EXTCSR</i>			
<i>Direct effect:</i>	<i>Burnout dimensions</i>		
<i>EPM_ST</i> –employee burnout dimensions	<i>BURN_EX</i>	<i>BURN_CY</i>	<i>BURN_PE</i>
<i>Moderator: EXTCSR</i>			
-1 SD (1.8861)	0.2754***	0.1955***	0.0122
Mean (2.8747)	0.1955***	0.1589***	-0.0022
+1 SD (3.8634)	0.1157**	0.1223**	-0.0167
<i>Panel C: Partial regression results (the impact of EPM ST and EXTCSR and burnout on employee performance)</i>			
<i>SELFPF</i> regressed on:	<i>SLELFPF</i>		
<i>EPM_ST</i>	-0.1383*	-0.1398*	-0.1684**
<i>BURN_EX</i>	-0.0808**	-	-
<i>BURN_CY</i>	-	-0.1245***	-
<i>BURN_PE</i>	-	-	-0.1125**
<i>EXTCSR</i>	-0.1010	-0.1328	-0.1276
<i>EPM_ST</i> × <i>EXTCSR</i>	0.0506**	0.0525**	0.0555**
<i>Panel D: Conditional indirect effects of EPM ST on employee performance through burnout at three levels of EXTCSR</i>			
<i>Indirect:</i>	<i>Burnout dimensions</i>		
<i>EPM_ST</i> –employee burnout dimensions – <i>SELFPF</i>	<i>BURN_EX</i>	<i>BURN_EX</i>	<i>BURN_EX</i>
<i>Moderator: EXTCSR</i>			
-1 SD (1.8861)	-0.0222*	-0.0243*	-0.0014
Mean (2.8747)	-0.0158*	-0.0198*	0.0002
+1 SD (3.8634)	-0.0093	-0.0152*	0.0019
<i>Index of moderated mediation:</i>			
<i>EXTCSR</i>	0.0065	0.0046	0.0016

*Note:* CI: confidence interval; bootstrap sample size = 5,000. *EPM\_ST* refers to the invasiveness of EPM. *BURN\_EX* refers to employee emotional exhaustion. *BURN\_CY* refers to employee cynicism. *BURN\_PE* refers to reduced employee professional efficacy. *EXTCSR* is measured as the level of external CSR activities as a continuous variable using the summed mean values of the respective items. Full result tables are provided in Appendix E Table 4.28–4.33. In Panels A–C: \*, \*\*, \*\*\* represent two-tailed statistical significance of the estimated coefficient at the 0.10, 0.05 and 0.01 levels, respectively. In Panel D: \*. The 99% confidence interval of the estimated coefficient or index excludes 0.

#### 4.6.5 Additional Analyses

This study posits that organisations' external CSR activities enhance employee acceptance of monitoring and reduce negative perceptions of EPM by fostering stronger employee identification with the organisation. These benefits of external CSR activities could mitigate the negative impact of EPM ST on employee burnout and performance. This study conducts two additional analyses. The first analysis examines whether organisations' external CSR activities improve employee acceptance of monitoring and reduce perceived invasion of privacy of EPM through increased employee identification, and whether these benefits moderate the impact of EPM ST on employee burnout. The second analysis explores whether employee identification play a more moderating role in the association between EPM ST and burnout/performance.

Employee identification (*IDENTIFI*) is assessed using a single-item measure adapted from Postmes et al. (2015).<sup>36</sup> Acceptance of monitoring (*ACCEPT*) is evaluated through three items adapted from Zweig and Webster (2002).<sup>37</sup> Perceived invasion of privacy in relation to EPM (*PRIVACY*) is assessed using a 5-item scale adapted from Alge et al. (2006).<sup>38</sup> Detailed questions are presented in Appendix C. The data related to these variables were collected through the survey described in Section 4.4. The path coefficients are presented in Figure 4.3.

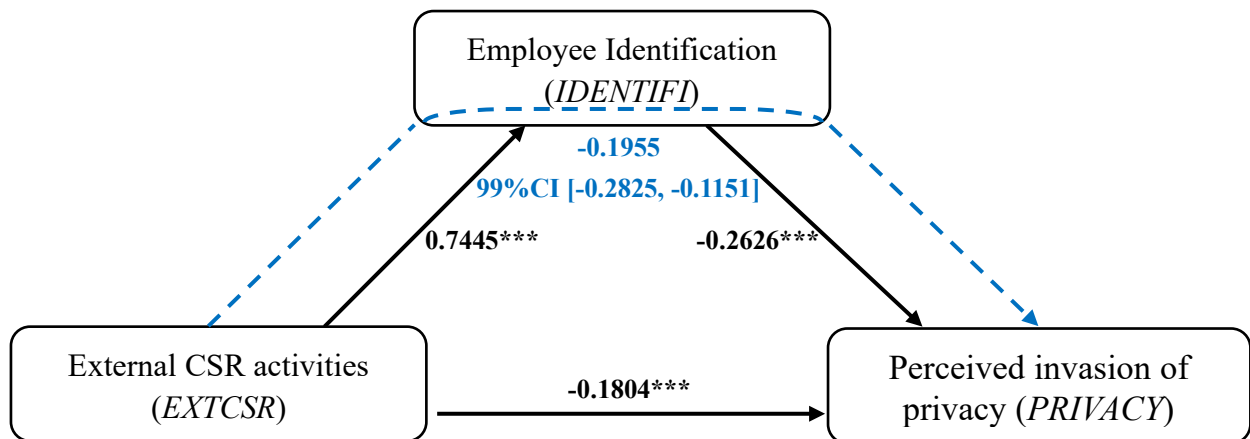
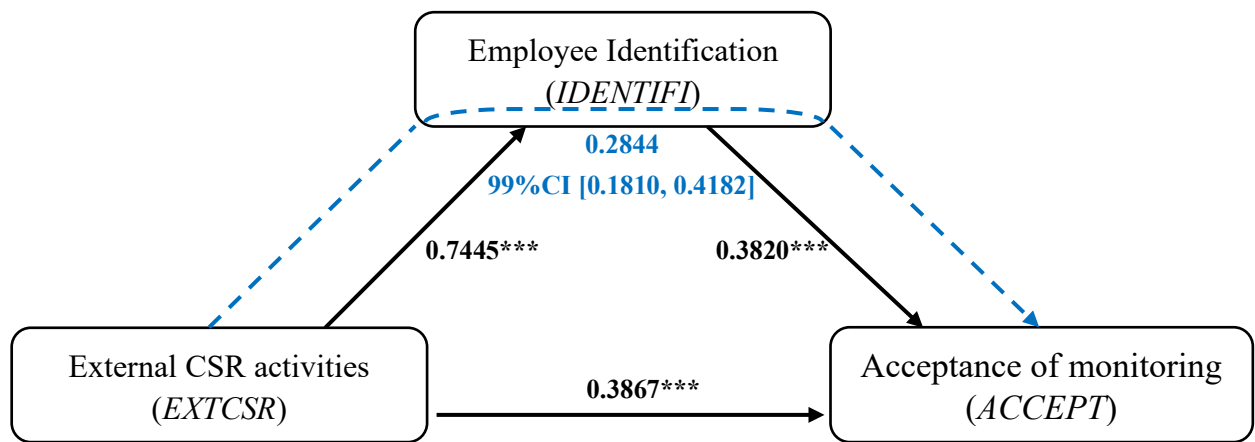
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<sup>36</sup> For employee identification, participants were asked to rate the extent to which they identified with their organisation on a 7-point scale, ranging from 1, 'not at all identified' to 5, 'extremely identified'.

<sup>37</sup> For acceptance of monitoring, participants were informed to express their attitudes towards the use of EPM on a 7-point Likert scale, ranging from 1, 'extremely negative' to 7, 'extremely positive'.

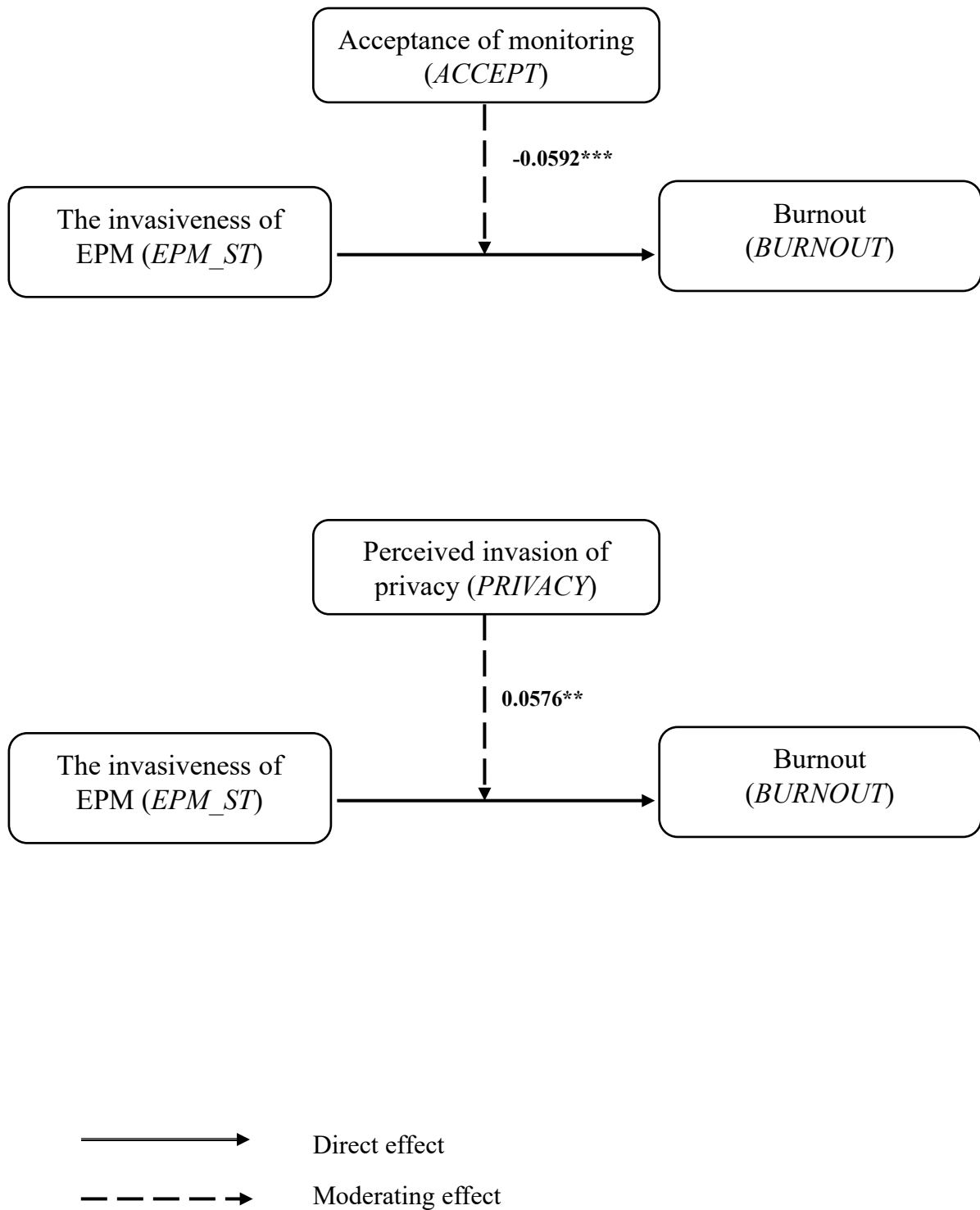
<sup>38</sup> For invasion of privacy, participants were asked to indicate their agreement with statements such as, 'The way that my organisation monitors its employees makes me feel uneasy'. Responses were recorded on a scale from 1, 'strongly disagree' to 5, 'strongly agree'.

Figure 4.3: Path coefficients for additional analysis



—————> Direct effect  
 - - - - -> Mediating effect

Figure 4.3: Path coefficients for additional analysis (continue)



For the first analysis, results reported in Table 4.14 indicate direct relationships between external CSR activities, employee identification, acceptance of EPM and perceived invasion of privacy of monitoring. Consistent with the CSR literature (e.g., Ng et al. 2019; Kim et al. 2010), the results in Panel A indicate a positive relationship between an organisation's external CSR activities and employee identification. This study also finds that both external CSR activities and employee identification are positively associated with employees' acceptance of monitoring. According to the results reported in Panel B, the relationship between external CSR activities and employees' acceptance of EPM becomes statistically insignificant when considering employee identification as a mediator. This result provides some evidence to support this study's argument in Section 4.6.3 that external CSR activities can strengthen employees' identification with the organisation, fostering more favourable attitudes towards EPM.

Further, the results from Panels C and D of Table 4.14 suggest a direct negative relationship between external CSR activities and employees' perceptions of invasion of privacy related to monitoring. This provides initial evidence that an organisation's external CSR activities contribute to reducing employees' negative perceptions of monitoring, such as invasion of privacy. According to the results presented in Panel D, the direct relationship between external CSR activities and employees' perceived invasion of privacy is negatively mediated by employee identification. This suggests that the positive impact of external CSR activities on employee identification may alleviate employees' concerns about EPM regarding invasion of privacy.

**Table 4.14: Results of simple mediation effect of employee identification**

<i>Panel A: Direct effect (mediator: IDENTIFI; dependent variable=ACCEPT)</i>						
	Direct effect	SE	t-value	p-value		
<i>EXTCSR –ACCEPT</i>	0.3867	0.2762	5.9095	0.0000		
<i>EXTCSR –IDENTIFI</i>	0.7445	0.4622	11.5294	0.0000		
<i>IDENTIFI –ACCEPT</i>	0.3820	0.4395	8.7004	0.0000		
<i>Panel B: Direct and indirect effect - (mediator: IDENTIFI; dependent variable =ACCEPT)</i>						
	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI
Total effect	0.3867	0.0654	5.9095	0.0000	0.2174	0.5559
Direct effect:						
<i>EXTCSR –ACCEPT</i>	0.1023	0.0689	1.4843	0.1384	-0.0760	0.2806
Indirect effect:						
<i>EXTCSR –IDENTIFI –ACCEPT</i>	0.2844	0.0449			0.1810	0.4182
<i>Panel C: Direct effect (mediator: IDENTIFI; dependent variable =PRIVACY)</i>						
	Direct effect	SE	t-value	p-value		
<i>EXTCSR –PRIVACY</i>	-0.1804	-0.1684	-3.4446	0.0006		
<i>EXTCSR –IDENTIFI</i>	0.7445	0.4622	11.5294	0.0000		
<i>IDENTIFI –PRIVACY</i>	-0.2626	-0.3949	-7.3176	0.0000		
<i>Panel D: Direct and indirect effect - (mediator: IDENTIFI; dependent variable =PRIVACY)</i>						
	Indirect effect	SE	Z-value	p-value	LL 99% CI	UL 99% CI
Total effect	-0.1804	0.0524	-3.4446	0.0006	-0.3158	-0.0449
Direct effect:						
<i>EXTCSR – PRIVACY</i>	0.0151	0.0563	0.2689	0.7882	-0.1306	0.1608
Indirect effect:						
<i>EXTCSR –IDENTIFI –PRIVACY</i>	-0.1955	0.0326			-0.2825	-0.1151

Notes: LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error; *EXTCSR* is measured as the level of external CSR activities as a continuous variable using the summed mean values of the respective items. *IDENTIFI* refers to employee identification; *ACCEPT* assesses employees' acceptance of monitoring; *PRIVACY* refers to employee-perceived invasion of privacy in relation to EPM. This study includes the following control variables: gender, age, job level, tenure, highest degree, remote month and personality traits. Bootstrap sample size = 5,000.

This study examines the moderating effects of employee acceptance of monitoring and perceived invasion of privacy on the direct link between EPM ST and employee burnout. A summary of results is presented in Table 4.15. Results from Panel B indicate that, when employees' acceptance of monitoring is categorised into three levels, the conditional direct effect of EPM ST on employee burnout becomes insignificant for those with a higher acceptance of monitoring. Combining these findings with the results presented in Panel A, where the coefficient of the interaction between EPM ST (*EPM\_ST*) and employee acceptance of monitoring (*ACCEPT*) is negative and statistically significant, these results suggest that employees' acceptance of monitoring plays a moderating role in the relationship between EPM ST and employee burnout. Furthermore, results detailed in Panels C and D suggest a moderating effect for employees' perceived invasion of privacy on the relationship between EPM ST and employee burnout. However, the conditional direct effect of EPM ST on employee burnout is insignificant when perceived invasion of privacy is categorised into three levels.

Furthermore, this study's second analysis explores whether employee identification plays a moderating role in the relationship between EPM ST and burnout and performance. The results are reported in Table 4.16. From Panel A, the relationship between EPM ST and employee performance is negative (coefficient = -0.0739, *p*-value = 0.0303) when employees exhibit low levels of identification with the organisation. Conversely, this negative association turns positive (coefficient = 0.0717, *p*-value = 0.0202) when employees have a high level of identification.

Moreover, as shown in Panel B of Table 4.16, the positive impact of EPM ST on employee burnout becomes insignificant (coefficient = 0.0481, *p*-value = 0.1391), suggesting the importance of employee identification as a moderating factor in the

relationship between EPM ST and employee burnout. Although the index in Panel C is not statistically significant, the results regarding the conditional effect of EPM ST on the indirect relationship of EPM ST on employee performance via burnout demonstrate the moderating effect of employee identification. When this indirect relationship considers the level of employee identification, the coefficients of the indirect effect of EPM ST on performance through burnout are reduced. These findings suggest that employee identification weakens the indirect effect, and this moderated effect intensifies for employees with higher levels of identification.

Taken together, these additional analyses provide supportive evidence that an organisation's external CSR activities can improve employees' acceptance of monitoring through increased employee identification. Employee identification plays a significant role in influencing how employees respond to EPM ST, affecting their burnout and performance.

**Table 4.15: Summary of results for the moderating effect of employee acceptance of monitoring and perceived invasion of privacy on the relationship between EPM ST and burnout**

*Panel A: Partial regression results (the impact of employee acceptance of monitoring (ACCEPT) on the relationship between EPM ST and employee burnout)*

<i>BURNOUT</i> regressed on:	Coefficient
<i>EPM_ST</i>	0.2864***
<i>ACCEPT</i>	0.1043
<i>EPM_ST</i> × <i>ACCEPT</i>	-0.0592***

*Panel B: Conditional direct effects of EPM ST on employee burnout at three levels of ACCEPT*

Direct effect: *EPM\_ST*–*BURNOUT*

Moderator: *ACCEPT*

	Coefficient
-1 SD (2.0778)	0.1635***
Mean (3.4618)	0.0816***
+1 SD (4.8458)	-0.0003

*Panel C: Partial regression results (the impact of perceived invasion of privacy (PRIVACY) on the relationship between EPM ST and employee burnout)*

<i>BURNOUT</i> regressed on:	Coefficient
<i>EPM_ST</i>	-0.1656**
<i>PRIVACY</i>	0.0423
<i>EPM_ST</i> × <i>PRIVACY</i>	0.0576**

*Panel D: Conditional direct effects of EPM ST on employee burnout at three levels of PRIVACY*

Direct: *EPM\_ST*–*BURNOUT*

Moderator: *PRIVACY*

	Coefficient
-1 SD (1.7253)	-0.0661
Mean (2.7842)	-0.0051
+1 SD (3.8431)	0.0559

*Note: EPM\_ST* refers to the invasiveness of EPM. *BURNOUT* refers to employee burnout at work. *ACCEPT* assesses employees' acceptance of monitoring; *PRIVACY* refers to employee-perceived invasion of privacy in relation to EPM. This study includes the following control variables: gender, age, job level, tenure, highest degree, remote work months and personality traits. Bootstrap sample size = 5,000. \*, \*\*, \*\*\* represent two-tailed statistical significance of the estimated coefficient at the 0.10, 0.05 and 0.01 levels, respectively. Full result tables are reported in Appendix F Table 4.34–4.35.

**Table 4.16: Results of moderating effect of employee identification**

<i>Panel A: Conditional direct effects of EPM ST on employee performance at three levels of employee identification</i>						
Direct effect: <i>EPM_ST</i> – <i>SELFPF</i>						
Moderator: <i>IDENTIFI</i>	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
-1 SD (2.4806)	-0.0739	0.0340	-2.1725	0.0303	-0.1620	0.0141
Mean (4.0729)	-0.0011	0.0250	-0.0447	0.9644	-0.0657	0.0635
+1 SD (5.6652)	0.0717	0.0308	2.3311	0.0202	-0.0079	0.1513
<i>Panel B: Conditional direct effects of EPM ST on employee burnout at three levels of employee identification</i>						
Direct effect: <i>EPM_ST</i> – <i>BURNOUT</i>						
Moderator: <i>IDENTIFI</i>	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
-1 SD (2.4806)	0.1290	0.0359	3.5952	0.0004	0.0362	0.2219
Mean (4.0729)	0.0886	0.0263	3.3622	0.0008	0.0204	0.1567
+1 SD (5.6652)	0.0481	0.0324	1.4816	0.1391	-0.0358	0.1320
<i>Panel C: Conditional indirect effects of EPM ST on employee performance through burnout at three levels of employee identification</i>						
Indirect: <i>EPM_ST</i> – <i>BURNOUT</i> – <i>SELFPF</i>						
Moderator: <i>IDENTIFI</i>	Coefficient	Bootstrap SE	LL 99% CI	UL 99% CI		
-1 SD (2.4806)	-0.0167	0.0080	-0.0432	-0.0015		
Mean (4.0729)	-0.0115	0.0055	-0.0286	-0.0010		
+1 SD (5.6652)	-0.0062	0.0050	-0.0228	0.0063		
			LL 99%			
Index of moderated mediation:	Index	Bootstrap SE	CI	UL 99% CI		
<i>IDENTIFI</i>	0.0033	0.0024	-0.0016	0.0117		

Notes: LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error. *EPM\_ST* refers to the invasiveness of EPM; *SELFPF* refers to employee performance. *BURNOUT* refers to employee burnout. *IDENTIFI* refers to employee identification. This study includes the following control variables: gender, age, job level, tenure, highest degree, remote month and personality traits. Bootstrap sample size = 5,000. Full result tables are reported in Appendix F Table 4.36–4.38.

#### **4.7 Conclusion and Limitations**

This study provides evidence that EPM ST is positively associated with employee performance via the mediating effect of employee burnout at work, particularly emotional exhaustion. An organisation's external CSR activities moderate the direct effect of EPM ST on employee burnout and the indirect effects of EPM ST on employee performance through burnout.

This study makes several contributions. First, it contributes to the management control literature by providing an exploration of the effect of EPM invasiveness on employee wellbeing and performance. Most management control studies focus on the general presence of monitoring practices and have mixed findings on these practices on employee attitudes and behaviours. For instance, some studies suggest that using EPM can enhance employee productivity and social connections (e.g., Wang et al. 2021; Wells et al. 2007), while other studies indicate that EPM use leads to and reduced job satisfaction (e.g., Stanton and Julian 2002) and lower performance (e.g., McNall and Stanton 2011). The findings of this study suggest that previous research overlooks how EPM functions as a resource within an organisation. To resolve the EPM performance paradox, it is essential to consider the mediating and moderating factors in the relationship. Mediating variables include factors such as employee burnout. Moderating variables cover organisational engagement in ethical practices including external CSR activities, which influences employee's identification and acceptance to monitoring. These factors affect employees' perceptions and behavioural responses to EPM. Additionally, the findings of this study broaden our understanding of the mechanisms underlying burnout in workplaces that employ emerging technologies.

Second, this study adds to the management control literature on technology-based monitoring by presenting evidence that an organisation's engagement in external

CSR activities can mitigate the adverse impact of monitoring practices on employees. Recent literature suggests that the introduction of new technologies enhances control effectiveness but also imposes substantial costs on both employees and organisations. Nappert and Bamber (2023) found that real-time tracking techniques increases work stress and challenges employee identity construction. Schedlinsky et al. (2020) indicate that technology-based monitoring reduces the performance-increasing effects of other management controls (e.g., relative performance information). Despite the prevalence of technology-based monitoring in organisations, it remains unclear whether an organisation's other management practices complement monitoring controls to mitigate relevant costs to employees and organisations. By leveraging insights from the CSR literature (e.g., Hameed et al. 2016; Ng et al. 2019), this study suggests that, even if an organisation's external CSR activities do not directly benefit employees, these practices can enhance employee identification with and acceptance of monitoring. Consequently, this positions technology-based monitoring more favourably to support organisational management while mitigating relevant costs on employee well-being and performance.

The findings of this study have practical implications in the following areas. First, as organisations integrate advanced information technologies into internal monitoring practices, particularly in the remote work context, this exerts negative impacts on the balance of employees' job demands and resources, resulting in increased burnout and impaired performance. Given the prevalence and impact of burnout, this study emphasises the need for organisations to exercise caution and consider the potential negative consequences when designing and implementing EPM. Doing so can help reduce work-related stress and foster healthier and more supportive working conditions. Second, this study suggests that organisations' external stakeholder management practices may benefit organisations by mitigating employees' negative

responses to invasive internal management practices and facilitating the implementation of tighter internal control and monitoring practices. This study emphasises the importance of an organisation taking an aggregate view of both its internal and external stakeholder management practices. This allows managers to strike a balance between ensuring employee compliance and satisfaction while upholding organisational values and responsibilities.

This study is subject to several limitations that should be considered. First, employee burnout is a chronic stress. The monitoring practices of organisations may change or adapt over time (Morris et al. 2017; Ravid et al. 2020). Future research may consider adopting a time-variant approach (Van der Stede 2014) to examine the effects of EPM ST on employee burnout and performance, taking into account potential changes in monitoring practices over time. Second, the findings of this study may be influenced by its use of employees' self-evaluated performance. Although self-evaluated performance is widely used in the literature (e.g., Oishi and Roth 2009; Schneider and Schimmack 2009), self-reported measures are subjective in nature and can be subject to biases and individual interpretation (Janssen 2000; Organ and Konovsky 1989). It is thus important to acknowledge that self-reported data may not fully capture the objective aspects of performance. In addition, this study acknowledges the limitation associated with using a single-item measure to assess performance. Single-item measures may not comprehensively capture the various dimensions of employee performance such as quality, efficiency, or creativity. Future studies could consider incorporating additional objective measures or performance evaluations from supervisors or other objective sources to provide a more comprehensive understanding of the relationships between EPM ST, employee burnout and performance.

## **Chapter 5: Conclusion of the Thesis**

### **5.1 Introduction**

This thesis presents three studies. The first study focuses on the measurement development and validation for EPM invasiveness, and the remaining two studies address the research aim of examining the impact of the invasiveness of EPM on employee wellbeing and performance. Given the absence of an established measurement for EPM invasiveness, the first study develops and validates a multifaceted measure to assess the extent of EPM invasiveness. The second study examines the impact of the invasiveness of EPM on employee's perception of workplace isolation. The third study investigates the effect of the invasiveness of EPM on employee burnout and performance. Sections 5.2 summarises each of these studies. Section 5.3 discusses the limitations and offers suggestions for future research.

### **5.2 Summary of Findings**

#### **5.2.1 Summary of Chapter 2: Development of the EPM Invasiveness Scale**

This study in Chapter 2 develops and validates a scale for the invasiveness of EPM based on an existing theoretical framework of EPM invasiveness (McNall and Stanton 2011; Ravid et al. 2020; Zweig and Webster 2002). The validation of this scale is conducted using data collected through an online survey involving 355 employees.

In line with the theoretical framework of EPM invasiveness (Ravid et al. 2020), this study identifies EPM invasiveness as a multidimensional construct with two main dimensions, EPM ST and EPM CC. EPM ST contributes to the invasiveness of EPM, characterised by the organisation employing a broader scope of monitoring techniques and expanding the qualitative focus of monitoring, especially those targeting employees'

personal information. EPM CC is comprised of EPM constraints and EPM control, and is defined as the extent to which the organisation's constraints and control on EPM limiting the invasiveness of EPM. This study introduces tools to measure the degree of EPM invasiveness. The validated EPM invasiveness scale is applied in an online survey to collect data for two studies examining the impact of EPM invasiveness on employee wellbeing and performance.

The findings of this study have implications for organisational managers, employees and government regulators regarding employee monitoring. First, the scale can serve as a useful tool for managers interested in assessing their organisation's level of EPM invasiveness. Second, by understanding the mediating role of organisational constraints and control on monitoring, employees can influence the policies issued by organisations and contribute to creating a healthier and more supportive work environment in the face of evolving technological monitoring practices. Third, workplace monitoring has significantly increased since the COVID-19 pandemic, highlighting the urgent need for regulatory measures to constrain the invasive use of monitoring while safeguarding the fundamental rights to privacy for individuals. The absence of a comprehensive understanding of invasive monitoring and lack of regulatory restrictions have allowed invasive monitoring practices to expand without adequate oversight (Ajunwa et al. 2017; Zickuhr 2021). The lack of validated measures also makes it difficult to identify the invasive use of monitoring and quantify the potential harms arising from such monitoring. The development of a multifaceted scale for the invasiveness of EPM facilitates regulators in better identifying and assessing the level of invasiveness associated with monitoring practices. This scale also provides regulators with insights to formulate more effective and comprehensive regulations that balance the needs of organisations with the protection of individual rights and wellbeing.

### **5.2.2 Summary of Chapter 3: EPM Invasiveness and Workplace Isolation**

The study in Chapter 3 examines the impact of the invasiveness of EPM on employees' perceived workplace isolation in the remote work context. Prior studies suggest that remote work accelerates the adoption of advanced information technology in performance measurement and monitoring (Schedlinsky et al. 2020; Yang et al. 2022) and calls for investigations on the effects of this transition, specifically the invasiveness of EPM, on organisations and employees (Becker and Marique 2014; Nappert and Bamber 2023; Ravid et al. 2020). Given that workplace isolation is a salient wellbeing issue for remote employees identified in prior research (e.g., Bartel et al. 2012; Daniel et al. 2018), this study investigates whether the invasiveness of EPM affects employees' perceived workplace isolation in the remote work context.

An online survey was conducted with 480 employees working for large organisations in the US, all of whom had experience with remote work and their organisation's use of electronic monitoring. The results indicate that EPM ST is positively associated with employees' workplace isolation via the mediating effect of employees' sense of control at work. The level of EPM CC negatively mediates the direct effect of EPM ST on employees' sense of control and the indirect effects of the EPM ST on employees' workplace isolation through their sense of control at work. This finding underscores the effectiveness of organisations' constraints and control on monitoring in enhancing employee acceptance of EPM, thereby reducing the negative effects of EPM invasiveness on their sense of control and subsequent employees' perceived workplace isolation.

This study makes several contributions to the literature. First, it enriches the management control literature examining technology-based monitoring. Prior research suggests that the introduction of advanced information technologies enables real-time

monitoring employees' input, work process, and performance, leading to a transition from ex post to ex ante performance management (Bellesia et al. 2023; Mouritsen and Kreiner 2016). However, as technology-based monitoring becomes more prevalent, the impact on employee wellbeing remains unclear. This study extends previous research by providing empirical evidence that invasive EPM diminishes employees' sense of control at work, amplifying perceptions of workplace isolation. Second, the study adds to literature on management control by enhancing the understanding of performance monitoring within the remote work context. Despite the rise in remote work and the widespread adoption of new monitoring technologies (Fayard et al. 2021), theoretical and empirical research is lagging in analysing the effects of these remote performance monitoring practices on employees (Nappert and Bamber 2023; Yang et al. 2022). This study finds that the invasive EPM intensifies the transfer of work-related and private information from remote employees to organisations. Consequently, employees experience a loss of important workplace resources necessary for their autonomy and relatedness needs, leading to perceptions of workplace isolation.

The findings of this study have the following practical implications. First, the findings can benefit organisations aiming to monitor remote employees while ensuring their wellbeing. Given the shift to flexible work arrangements in the post-pandemic era (Knight et al. 2022; Trevor and Holweg 2022), investing in EPM for employee monitoring remains crucial (Hughes 2021; Wang et al. 2021). To optimise employee wellbeing and performance, organisations and managers should adopt a judicious approach to revamp management controls. This approach should be characterised by a careful balance that not only meets the organisational imperative to monitor and enhance performance but also satisfies the fundamental needs of employees, including autonomy and relatedness. Second, the findings regarding the negative mediating role

of organisations' constraints and control limiting the invasive use of EPM emphasise the importance of balancing organisation and employee needs. In this way, organisations can create a supportive work environment that harmonises technology, employee wellbeing and performance to create a sustainable workplace.

### **5.2.3 Summary of Chapter 4: EPM Invasiveness, Burnout and Performance**

The study in Chapter 4 investigates the effect of the invasiveness of EPM on employee burnout and performance. Recent studies highlight the growing prevalence of burnout as a significant wellbeing concern for employees in the remote work environment (Ninaus et al. 2021; Spagnoli et al. 2020), posing challenges for both employees and organisations (Nahrgang et al. 2011; Van den Broeck et al. 2008). Given the increasing adoption of remote work, understanding the mechanisms through which burnout occurs in this work context is crucial. Previous literature indicates that the use of EPM imposes costs on employees, primarily manifested as increased work-related stress (Patil and Bernstein 2022; Singh et al. 2022). Thus, it is unclear whether organisational use of EPM in the remote work context can lead to employee burnout.

This study used the data collected in the online survey discussed in Chapter 3 for analysis. The results indicate that the invasiveness of EPM indirectly affects employee performance by influencing employee burnout. The greater invasiveness of EPM corresponds to increased burnout among employees, leading to decreased employee performance. The findings of this study also reveal that the extent to which EPM's invasiveness affects employee performance via burnout is more pronounced in organisations with lower levels of external CSR activities than in those with higher levels of external CSR engagement.

This study makes several contributions to the literature. First, this study contributes to the EPM literature by providing a more detailed exploration of EPM

characteristics on employee wellbeing and performance. While the literature on EPM predominantly examines the impact of the overall presence of EPM on employee attitudes and behaviour and provides mixed findings, the increasing invasiveness of EPM design and use necessitates a more detailed exploration of how individuals respond to invasive EPM and its effects on wellbeing and performance (Ravid et al. 2020, 2023). This study suggests that the invasive EPM intensifies employee burnout and negatively affects employee performance, providing insights into the mechanisms through which burnout occurs in the remote work and emerging technology context. Second, this study contributes to the management control literature on technology-based monitoring by providing evidence that external CSR activities can mitigate the adverse impact of monitoring control practices on employees. Recent literature on management control suggests that new technologies enhance control effectiveness, but they also impose substantial costs on both employees and organisations (e.g., Manoochehri and Pinkerton 2003; Nappert and Bamber 2023; Schedlinsky et al. 2020). The findings of this study suggest that an organisation's management of external stakeholders (i.e., external CSR activities), even if not directly benefiting employees, can increase employee identification—complementing technology-based monitoring (i.e., EPM) to mitigating its negative impact on employee wellbeing and performance.

### **5.3 Limitations and Opportunities for Future Research**

This thesis is subject to several limitations. First, organisational monitoring practices are subject to evolution and adaptation over time in response to technological advances, altered managerial strategies and shifts in work dynamics. The analysis conducted in this thesis takes a cross-sectional approach. Thus, exploration of the dynamic interplay between the invasiveness of EPM and employee wellbeing and performance over an extended period is beyond the scope of this thesis. Further,

considering that employee burnout is characterised by chronic stress, this thesis does not examine the influence of EPM invasiveness on the development of employee burnout. The cross-sectional design of the analysis limits the ability to capture the intricate and evolving relationship between EPM invasiveness and the prolonged stress exposure that contributes to the development of burnout. Future research could use a time-variant approach (Van der Stede 2014) to study the effect of the invasiveness of EPM on employees' wellbeing and performance, considering potential changes in monitoring practices over time. Longitudinal research would also provide a more comprehensive understanding of how these factors unfold over time and how changes in monitoring practices impact employee wellbeing and performance in the long run.

Second, the findings of this thesis may be influenced by its use of employees' self-evaluated performance. While self-evaluated performance has been widely used in relevant research (e.g., Dunk 1993; Oishi and Roth 2009), self-reported measures are subjective in nature and may introduce biases and individual interpretation (Janssen 2000; Organ and Konovsky 1989). This thesis acknowledges that self-reported data may not fully capture objective aspects of performance. Future studies could consider incorporating additional objective measures or performance evaluations from supervisors or other objective sources to extend the understanding of the relationship between EPM invasiveness and employee wellbeing and performance.

Third, the analyses in this thesis use data collected through an online survey conducted during the COVID-19 pandemic. This thesis acknowledges that the pandemic context may introduce limitations to the generalisability of the findings presented. While the unprecedented pandemic conditions have provided a unique de facto global experiment in remote working (Kniffin et al. 2020) and enabled this thesis to investigate the impact of EPM on employee wellbeing and performance, issues

related to control over one's work and feelings of isolation are also significant factors experienced by a diverse range of individuals throughout this pandemic. Future studies could explore the effects of EPM invasiveness on employees in the post-COVID-19 context, providing a more comprehensive understanding of the impact of EPM invasiveness on employee wellbeing and performance.

Fourth, the EPM invasiveness scale used in this thesis has not been used in previous research. Based on qualitative studies (e.g., Ravid et al. 2020; Zweig and Webster 2002), this thesis develops and validates a unique multifaceted scale of the invasiveness of EPM. The scale addresses an important aspect of measuring employees' perception of EPM invasiveness in practice, further research is required to calibrate and refine the scale.

Last, in addition to examining the impact of EPM invasiveness on employees' perceived workplace isolation and burnout, future studies could explore its effects on other dimensions of employee wellbeing, such as stress levels and overall mental health. Researchers could also delve into the implications of other characteristics of EPM, such as the transparency of monitoring and the synchronicity of the monitoring process, on individual reactions and organisation-level outcomes. By employing dynamic methodologies and diverse sample populations, such future research could lead to a deeper comprehension of the effects of EPM, providing valuable insights into the modern workplace and the future of work.

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## Appendices

### Appendix A: Participant Screening Survey Questionnaire

Dear Respondent,

We are writing to seek your assistance in a research project at The Australian National University. We are running a 2-part longitudinal study and **are looking for participants with experience of working remotely in organisations that monitor employees' working activities or performance.**

**In the current status, you are doing the first survey (Survey 1).** Participants who complete the first survey and are filtered as the target participants for the second survey will receive an invitation via Prolific to take the second survey.

The overall reward of the 2-part longitudinal study is **£ 4.13**. The 2-part longitudinal study is set up as follows:

**Survey 1: Estimated Completion Time 1 minute, Reward per Participant £ 0.13.**

**Survey 2: Estimated Completion Time 30 minutes, Reward per Participant £ 4.00.**

By completing the survey, you are consenting to participate in this survey on a voluntary basis. To participate in the study, you should be over eighteen years of age. After completing and submitting the survey questionnaire successfully, a URL will be presented at the end of the survey. You can click the URL to claim your remuneration.

Your responses to this survey will be kept confidential and completely anonymous since the survey does not require any identifying information. Please be assured that the data collected will only be used by the researchers for the purposes of this study and will not be distributed to any third parties.

*If you consent to continue this survey, please click "Next" to the next page.*

For each of the following questions, please select the choice that best reflects your current status. There are no right or wrong answers.

Please indicate your Prolific ID: \_\_\_\_\_

Are you older than the age of 18?

- Yes
- No

Please indicate the country that your current organisation is located:

- United States of America
- Other country (please specify): \_\_\_\_\_

Do you have **remote work experience** (a total of more than 3 months cumulatively in the last 24 months) with your current organisation?

- Yes
- No

**While you are working remotely**, do you rely on **electronic devices** (e.g., computer, laptop, tablet, phone, etc.) to perform your daily tasks?

- Yes
- No

Counting all locations where your organisation operates, what is **the total number of employees** who work in your current organisation?

- 100 or more
- Below 100

*Congratulations! You have answered all questions. Please click "Next" to submit your responses and get the URL link to claim your remuneration!*

-----End of Survey-----

## **Appendix B: Validation Survey Questionnaire**

Dear Respondent,

### **Re: The impact of electronic performance monitoring on employees' attitudes in the remote work context**

We are writing to seek your assistance in a research project at The Australian National University. This project aims to investigate how the design and use of electronic performance monitoring affect employees' work attitudes and wellbeing in the remote work context. Electronic performance monitoring involves the use of technological means to observe, record, and analyse information that directly or indirectly relates to employee job performance. Examples of electronic performance monitoring include e-mail and computer use monitoring, activity attendance monitoring, video monitoring, GPS tracking, etc. The findings of our study will be useful for the development of monitoring controls and the design of an effective performance evaluation system that can improve employee wellbeing and performance outcomes.

We are running a 2-part longitudinal study and are looking for participants with experience of working remotely in organisations that monitor employees' working activities or performance.

### **You are now invited to participate in the second survey (Survey 2).**

The overall reward of the 2-part longitudinal study is £ 4.13. **For this survey, the estimated completion time is 20 minutes, the reward per participant is £ 4.00.**

By completing the survey, you are consenting to participate in this survey on a voluntary basis. To participate in the study, you should be over eighteen years of age. After completing and submitting the survey questionnaire successfully, a URL will be presented at the end of the survey upon the completion of the survey. You can click the URL to claim your remuneration.

Your responses will remain completely anonymous since the survey does not require any identifying information. Please be assured that the data collected will only be used by the researchers for the purposes of this study and will not be distributed to any third parties.

*If you consent to continue this survey, please click "Next" to the next page.*

## **INSTRUCTIONS**

We are interested in understanding the impact of the use of electronic performance monitoring on your working attitudes and performance outcome in the remote work context. We would like you to share with us your remote work experience as accurately as you can. For each of the following questions, please select the choice that best reflects your current status. There are no right or wrong answers.

Please indicate your Prolific ID: \_\_\_\_\_

### **Personality traits**

How well do the following statements describe your personality? Please tick a number from 1 to 5 to indicate your agreement with each of the following statements.

#### **I see myself as someone who:**

	<b>Strongly disagree</b>	<b>Neither agree nor disagree</b>			<b>Strongly agree</b>
• is reserved	1	2	3	4	5
• is generally trusting	1	2	3	4	5
• tends to be lazy	1	2	3	4	5
• is relaxed, handles stress well	1	2	3	4	5
• has few artistic interests	1	2	3	4	5
• is outgoing, sociable	1	2	3	4	5
• tends to find fault with others	1	2	3	4	5
• does a thorough job	1	2	3	4	5
• gets nervous easily	1	2	3	4	5
• has an active imagination	1	2	3	4	5
• is considerate and kind to almost everyone	1	2	3	4	5

### **Questions about remote work in the organisation**

Please indicate how many months you have remotely worked accumulatively for your current organisation in the last 24 months (in month): \_\_\_\_\_

Please rate the effectiveness of your organisation's ability to manage and support a remote workforce.

- 1 Very poor
- 2
- 3
- 4 Neutral
- 5
- 6
- 7 Very good

Does your organisation require employees to **work or communicate via an online system** (e.g., Microsoft teams) **or online software** (e.g., Zoom)?

- Yes
- No

**During your remote work period**, does your organisation provide you with **working devices** (e.g., phone, computer or laptop) **or remote access to the working devices in the in-site office**?

- Yes, the organisation only provides me with working devices for remote work (a).
- Yes, the organisation only gives me remote access to the working devices in the in-site office (b).
- Yes, the organisation provides me with both working devices for remote work and remote access to working devices in the in-site office (c).
- No, neither of them is provided. I use my personal devices to perform tasks (d).

Does the working device(s) provided by your organisation **has (have) pre-installed applications or software** that can monitor employees' working behaviours and performance? (*display if the answer a or c in the previous question is selected*)

- Yes
- No

Does the **working device(s) in the in-site office** has(have) pre-installed applications or software that can monitor employees' working behaviours and performance? (*display if the answer b or c in the previous question is selected*)

- Yes
- No

**Do you need to install applications or software** that can monitor employees' working behaviours and performance on your personal devices?

- Yes
- No

Based on your own remote work experience, please rate to what extent you agree or disagree with the following statements:

	<b>Strongly disagree</b>				<b>Neither agree nor disagree</b>			<b>Strongly agree</b>
	1	2	3	4	5	6	7	
• My work productivity increases when I work remotely.	1	2	3	4	5	6	7	
• Working remotely improves my work-life balance.	1	2	3	4	5	6	7	
• Working remotely allows me to make my own decisions about how to schedule my work.	1	2	3	4	5	6	7	
• Working remotely allows me to make a lot of decisions on my own.	1	2	3	4	5	6	7	
• Working remotely allows me to decide on my own how to go about doing my work.	1	2	3	4	5	6	7	

## **EPM invasiveness**

### **EPM scope**

Based on your own remote work experience, are the following **electronic performance monitoring practices** used in your organisation?

Please respond to the following questions by selecting Yes or No.

#### **Does your organisation:**

- |   |     |    |
|---|-----|----|
| • monitor employees' e-mail content   | Yes | No |
| • monitor employees' working files  | Yes | No |
| • track employees' social media feeds   | Yes | No |
| • hold regular online meetings during the working time  | Yes | No |
| • monitor employees' computer usage (e.g., content and time)  | Yes | No |
| • require employees to provide daily report on their working activities   | Yes | No |
| • track employees' time at work with a time recording system  | Yes | No |
| • track employees' keystrokes and time spent at the keyboard  | Yes | No |
| • record employees' attendance at meetings or other organisational activities   | Yes | No |
| • require employees to share their screen during working time   | Yes | No |
| • monitor employees' activities by using facial recognition tools   | Yes | No |
| • require employees to keep cameras turned on during the working time   | Yes | No |
| • monitor employees' telephone use (e.g., phone tapping, time spent on call and numbers called)                                 | Yes | No |
| • track employees' physical position or geospatial movement (e.g., GPS tracking)  | Yes | No |
| • track employees' internet usage or activities (e.g., monitoring web browsing history and internet connection history)         | Yes | No |
| • incentivise wellness programs at work using FitBit or similar technology to monitor employees' physical activity              | Yes | No |
| • incentivise electronic medication sensors (e.g., heart rate checking tool) to monitor employees' physical activity and health | Yes | No |

**Based on your own remote working experience, please answer the following questions:**

How constant in terms of the duration and intervals are the electronic performance monitoring practices used in your organisations?

- Monitoring is continuous
- Monitoring is random and not predictable
- Monitoring is random but predictable

Are all employees in your organisation monitored by electronic performance monitoring practices?

- Yes
- No

Are electronic performance monitoring practices individualized in your organisation?

- Yes
- No

Are electronic performance monitoring practices in your organisation monitored at the individual level or organisational level?

- Monitored at the individual level
- Monitored at the organisational level
- Don't know

Please rate how detailed your organisation communicates the outcomes of monitoring with employees.

- 1 Not at all communicated
- 2
- 3
- 4 Moderate level of detail
- 5
- 6
- 7 Extremely detailed

### EPM target

Based on your own remote work experience, please indicate the extent of your agreement to the following statements by ticking a number from 1 to 7.

### The electronic performance monitoring practices used by your organisation capture:

	<b>Strongly disagree</b>	<b>Neither agree nor disagree</b>					<b>Strongly agree</b>
<ul style="list-style-type: none"> <li>• information about <b>employees' thoughts, feelings and physiology</b> (e.g., biometric information, social media feed, personal e-mail content)</li> </ul>	1	2	3	4	5	6	7
<ul style="list-style-type: none"> <li>• information about <b>employees' body or location</b> (e.g., video monitoring, GPS tracking)</li> </ul>	1	2	3	4	5	6	7
<ul style="list-style-type: none"> <li>• information about <b>employees' tasks or task behaviour</b> (e.g., keystroke tracking, working file monitoring)</li> </ul>	1	2	3	4	5	6	7

Please rate to what extent **the intimacy of information captured by the electronic performance monitoring practices used by your organisation affects your attitudes towards monitoring.**

- 1 Not at all affected
- 2
- 3
- 4 Moderately affected
- 5
- 6
- 7 Affected to a great extent

### EPM constraints (set 1)

Based on your own remote work experience, please respond to each of the following questions by ticking a number from 1 to 7.

**Please rate to what extent your organisation has explicit policies on:**

	<b>Very little</b>	<b>Neutral</b>					<b>Very much</b>
<ul style="list-style-type: none"> <li>• When electronic performance monitoring practices could occur</li> </ul>	1	2	3	4	5	6	7
<ul style="list-style-type: none"> <li>• How electronic performance monitoring practices occur</li> </ul>	1	2	3	4	5	6	7
<ul style="list-style-type: none"> <li>• How the collected monitoring data would be used</li> </ul>	1	2	3	4	5	6	7
<ul style="list-style-type: none"> <li>• Who could access the collected monitoring data</li> </ul>	1	2	3	4	5	6	7

## EPM constraints (alternative set 2)

How adequate is the organisation's explanation of the procedures for deciding:

	Not at all adequate		Moderate level of adequate				Extremely Adequate
• When electronic performance monitoring practices could occur	1	2	3	4	5	6	7
• How electronic performance monitoring practices occur	1	2	3	4	5	6	7
• How the collected monitoring data would be used	1	2	3	4	5	6	7
• Who could access the collected monitoring data	1	2	3	4	5	6	7

## EPM control (set 1)

Please indicate the extent of your agreement to the following statement by ticking a number from 1 to 7.

*“Employees have input into **the design** of the electronic performance monitoring practices.”*

- 1 Strongly disagree
- 2
- 3
- 4 Neither agree nor disagree
- 5
- 6
- 7 Strongly agree

Please rate to what extent employees have an opportunity to influence **the use** of electronic performance monitoring.

- 1 No opportunity
- 2
- 3
- 4 Moderate level of opportunity
- 5
- 6
- 7 Full opportunity

## EPM control (alternative set 2)

Whether employees have options to turn off monitoring devices or quit monitoring software/applications during **work hours** or times when privacy is needed.

- Yes
- No

Whether employees have options to turn off monitoring devices or quit monitoring software/applications during **non-work hours** or times when privacy is needed.

- Yes
- No

**Please answer the following questions based on your own remote work experience.**

**Perceived invasion of privacy:**

Please indicate your agreement to the following statements by ticking a number from 1 to 7.

	<b>Strongly disagree</b>				<b>Neither agree nor disagree</b>				<b>Strongly agree</b>
	1	2	3	4	5	6	7		
• I feel that my organisation’s monitoring policies and the manners of monitoring are an invasion of privacy.	1	2	3	4	5	6	7		
• The way that my organisation monitors its employees makes me feel uneasy.	1	2	3	4	5	6	7		
• I feel personally invaded by the practices used by my organisation to collect personal information.	1	2	3	4	5	6	7		
• I feel comfortable about the types of personal information that my organisation collects.	1	2	3	4	5	6	7		
• I have little reason to be concerned about my privacy here in my organisation.	1	2	3	4	5	6	7		

**Monitoring fairness:**

	<b>Strongly disagree</b>				<b>Neither agree nor disagree</b>				<b>Strongly agree</b>
	1	2	3	4	5	6	7		
• Overall, the tools used in my organisation to monitor employee’s working activities are fair.	1	2	3	4	5	6	7		
• The procedures used to monitor my working activities are fair.	1	2	3	4	5	6	7		
• I believe the practices the organisation monitors employees’ working activities are fair.	1	2	3	4	5	6	7		
• It's important that you pay attention to this study. Please tick 'Strongly disagree'. [ <i>Attention check question</i> ]	1	2	3	4	5	6	7		

Based on your own remote work experience, please answer each of the following questions by ticking a number from 1 to 7.

**Monitoring usefulness:**

Do you feel that electronic performance monitoring practices used by your organisation are useful in helping accomplish tasks?

- 1 Not at all useful
- 2
- 3
- 4 Neutral
- 5
- 6
- 7 Extremely useful

Do you feel that electronic performance monitoring practices used by your organisation are useful in aiding collaboration?

- 1 Definitely not useful
- 2
- 3
- 4 Neutral
- 5
- 6
- 7 Definitely useful

**Compliance with monitoring**

Based on your own remote work experience, please rate to what extent you agree or disagree with the following statement by ticking a number from 1 to 7:

*“I accept electronic monitoring practices used in my organisation.”*

- 1 Strongly disagree
- 2
- 3
- 4 Neither agree nor disagree
- 5
- 6
- 7 Strongly agree

Do you make any efforts to prevent your activities from being monitored?

- Yes. Please specify what you have done: \_\_\_\_\_
- No

**Based on your own remote work experience, please respond to each of the following questions by ticking a number from 1 to 7.**

### **Acceptance of monitoring**

What is your attitude towards the use of electronic performance monitoring practices by your organisation?

- 1 Extremely negative
- 2
- 3
- 4 Neutral
- 5
- 6
- 7 Extremely positive

To what extent do you like the electronic performance monitoring practices used by your organisation?

- 1 Not at all liked
- 2
- 3
- 4 Moderately like
- 5
- 6
- 7 Liked to a great extent

To what extent do you enjoy electronic performance monitoring practices used by your organisation?

- 1 Not at all enjoyed
- 2
- 3
- 4 Moderately enjoyed
- 5
- 6
- 7 Enjoyed to a great extent

How willing are you to utilise electronic performance monitoring practices to improve your performance?

- 1 Extremely unwilling
- 2
- 3
- 4 Neutral
- 5
- 6
- 7 Extremely willing

### Satisfaction with monitoring

	Not satisfied at all		Moderately satisfied			Extremely satisfied	
• How satisfied are you with the practices used by your organisation to monitor your working activities and performance?	1	2	3	4	5	6	7
• To what extent would you be satisfied with your performance appraisals if they were to be based on electronically monitored data?	1	2	3	4	5	6	7

### Perceived dignity and respect

To what extent do you feel that the electronic performance monitoring practices used by your organisation **show respect to you and preserve your dignity?**

- 1 Not at all
- 2
- 3
- 4 Moderate level
- 5
- 6
- 7 To a great extent

Do you think that electronic performance monitoring practices are **used in an ethical manner in your organisation?**

- 1 Not at all ethical
- 2
- 3
- 4 Moderately ethical
- 5
- 6
- 7 Extremely ethical

### Perceived ethicality of EPM

Do you feel that the data collected via electronic performance monitoring practices used by your organisation **is appropriate for determining your presence at work?**

- 1 Not at all accurate
- 2
- 3
- 4 Moderately accurate
- 5
- 6
- 7 Extremely accurate

### **Perceived accuracy of EPM**

To what extent has your willingness to work for your organisation **changed** since your organisation adopted electronic performance monitoring practices?

- 1 Very little
- 2
- 3
- 4 About the same
- 5
- 6
- 7 Very much

### **Employee identification**

Please rate the **extent to which you identify with the organisation** by ticking a number from 1 to 7.

- 1 Not at all identified
- 2
- 3
- 4 Moderately identified
- 5
- 6
- 7 Extremely identified

### **EPM invasiveness (overall question)**

Overall, how do you rate the level of invasiveness of your organisation's use of electronic performance monitoring practices?

- 1 Very low
- 2
- 3
- 4 Neutral
- 5
- 6
- 7 Very high

**Demographics and debriefing questions:**

Please indicate your current employment status.

- Employed (full-time)
- Employed (part-time)
- Unemployed
- Other (please specify)

Are you currently working remotely?

- Yes, I am.
- No, I am not.

Do you have remote work experience **before** the COVID-19 pandemic?

- Yes, I have.
- No. I haven't.

Do you work remotely **during** the COVID-19 pandemic?

- Yes
- No

Do you have any agreement with your organisation about such work arrangement before you work remotely?

- Yes, I have.
- No. I haven't.

**Based on your own remote work experience**, please respond to each of the following questions by ticking a number from 1 to 7.

Please rate your satisfaction with your current job when you work remotely.

- 1 Not at all satisfied
- 2
- 3
- 4 Moderately satisfied
- 5
- 6
- 7 Extremely satisfied

To what extent has your job satisfaction **changed after the** use of electronic performance monitoring practices?

- 1 Significantly decreased
- 2
- 3

- 4 About the same
- 5
- 6
- 7 Significantly increased

Please rate the level of your physical health when you work remotely.

- 1 Not very good
- 2
- 3
- 4 Neutral
- 5
- 6
- 7 Very good

To what extent has your physical health **changed** after the use of electronic performance monitoring practices?

- 1 Significantly decreased
- 2
- 3
- 4 About the same
- 5
- 6
- 7 Significantly improved

Please rate the extent of your **intention to exit the organisation** following the start of the implementing of electronic monitoring practices.

- 1 Very little
- 2
- 3
- 4 Neutral
- 5
- 6
- 7 Very much

Well done! You almost complete the survey. Only have very few questions to answer. Please click "Next" to the last part of the survey!

**Based on your own remote work experience, please respond to each of the following questions by ticking a number from 1 to 7.**

For the period of working remotely, please rate the level of your performance compared to your co-workers in a similar position at the same level.

- 1 A lot lower than average
- 2
- 3
- 4 About the same with average
- 5
- 6
- 7 A lot higher than average

To what extent has your performance **changed** after the use of electronic performance monitoring practices?

- 1 Significantly decreased
- 2
- 3
- 4 About the same
- 5
- 6
- 7 Significantly improved

To what extent has the COVID-19 influences the effect of electronic monitoring practices on your performance?

- 1 Very little
- 2
- 3
- 4 Neutral
- 5
- 6
- 7 Very much

**Based on your own remote work experience**, please answer the following questions with your best estimate.

On average, how many hours per week do you spend on work during the remote work period (in hour): \_\_\_\_\_

To what extent has your time spent on work per week **changed** after the use of electronic performance monitoring practice (**in percentage**, please also indicate the direction of such change by using "increase/+" or "decrease/-"): \_\_\_\_\_

This is a simple question, when asked for your favourite colour you need to enter the word puce in the text box below. \_\_\_\_\_

Please indicate your age (in years): \_\_\_\_\_

What is your gender?

- Male
- Female
- Other

What is the highest level of education you have completed?

- Secondary
- Tertiary (undergraduate degree)
- Tertiary (postgraduate degree)
- Other (please specify): \_\_\_\_\_

Which of the following most closely matches your job level:

- Intern
- Entry Level
- Analyst / Associate
- Manager
- Senior Manager
- Director
- Other (Please specify): \_\_\_\_\_

Please indicate how long you have been working in the current organisation (in years):

\_\_\_\_\_

Please indicate how long you have been **remotely working** in your current organisation (in years): \_\_\_\_\_

Please select an answer in the box to indicates which of the following categories best describes the industry you primarily work in (regardless of your actual position).

▼ Agriculture, Forestry, Fishing and Hunting ... Other Industry. Please specify:  
\_\_\_\_\_

How would you best describe yourself?

- Caucasian
- Latino/Hispanic
- Middle Eastern
- African

- Caribbean
- Asian
- Other (Please specify): \_\_\_\_\_
- Prefer not to say

What is your religious belief?

- Christian (Catholic protestant or any other Christian denominations)
- Buddhist
- Hindu
- Muslim
- Jewish
- Sikh
- Any other religion (Please specify): \_\_\_\_\_
- No Religion
- Prefer not to say

Congratulations! You have answered all your questions. Please click "Next" to submit your responses and get the URL link to claim your remuneration!

-----End of Survey-----

## Appendix C: Main Survey Questionnaire

Dear Respondent,

### **Re: The impact of electronic performance monitoring and CSR activities on employees' work attitudes and well-being in the remote work context**

We are writing to seek your assistance in a research project at The Australian National University. This project aims to investigate how the design and use of electronic performance monitoring affect employees' work attitudes and wellbeing in the remote work context. Electronic performance monitoring involves the use of technological means to observe, record, and analyse information that directly or indirectly relates to employee job performance. Examples of electronic performance monitoring include e-mail and computer use monitoring, activity attendance monitoring, video monitoring, GPS tracking, etc. The findings of our study will be useful for the development of monitoring controls and the design of an effective performance evaluation system that can improve employee wellbeing and performance outcomes.

We are running a 2-part longitudinal study and are looking for participants with experience of working remotely in organisations that monitor employees' working activities or performance.

### **You are now invited to participate in the second survey (Survey 2).**

The overall reward of the 2-part longitudinal study is £ 4.13. **For this survey, the estimated completion time is 30 minutes, the reward per participant is £ 4.00.**

By completing the survey, you are consenting to participate in this survey on a voluntary basis. To participate in the study, you should be over eighteen years of age. After completing and submitting the survey questionnaire successfully, a URL will be presented at the end of the survey. You can click the URL to claim your remuneration.

Your responses to this survey will be kept confidential and completely anonymous since the survey does not require any identifying information. Please be assured that the data collected will only be used by the researchers for the purposes of this study and will not be distributed to any third parties.

*If you consent to continue this survey, please click "Next" to the next page.*

**Welcome! Thank you for participating in this survey.**

**INSTRUCTIONS**

We are interested in understanding the impact of the use of electronic performance monitoring on your working attitudes and performance outcome in the remote work context. We would like you to share with us your remote work experience as accurately as you can. For each of the following questions, please select the choice that best reflects your current status. There are no right or wrong answers.

Please indicate your Prolific ID: \_\_\_\_\_

Please indicate how many months you have remotely worked cumulatively for your current organisation in the last 24 months (in month): \_\_\_\_\_

**Personality traits**

**How well do the following statements describe your personality?** Please tick a number from 1 to 5 to indicate your agreement with each of the following statements.

**I see myself as someone who:**

	<b>Strongly disagree</b>	<b>Neither agree nor disagree</b>			<b>Strongly agree</b>
• is reserved	1	2	3	4	5
• is generally trusting	1	2	3	4	5
• tends to be lazy	1	2	3	4	5
• is relaxed, handles stress well	1	2	3	4	5
• has few artistic interests	1	2	3	4	5
• is outgoing, sociable	1	2	3	4	5
• tends to find fault with others	1	2	3	4	5
• does a thorough job	1	2	3	4	5
• gets nervous easily	1	2	3	4	5
• has an active imagination	1	2	3	4	5
• is considerate and kind to almost everyone	1	2	3	4	5

## Self-discipline

Using the scale provided, please tick a number from 1 to 5 to indicate how much each of the following statements reflects how you typically are.

	Not like me at all	2	Somewhat like me	4	Very much like me
• I am good at resisting temptation.	1	2	3	4	5
• I have a hard time breaking bad habit.	1	2	3	4	5
• I say inappropriate things.	1	2	3	4	5
• I have trouble concentrating.	1	2	3	4	5
• I do certain things that are bad for me, if they are fun.	1	2	3	4	5
• I often act without thinking through all the alternatives.	1	2	3	4	5
• I am lazy.	1	2	3	4	5
• I refuse things that are bad for me.	1	2	3	4	5
• I wish I had more self-discipline.	1	2	3	4	5
• Sometimes I can't stop myself from doing something, even if I know it is wrong.	1	2	3	4	5
• Pleasure and fun sometimes keep me from getting work done.	1	2	3	4	5
• I am able to work effectively toward long-term goals.	1	2	3	4	5
• People would say that I have iron self-discipline.	1	2	3	4	5

## Questions about remote work in the organisation

Does your organisation require employees to **work or communicate via an online system** (e.g., Microsoft teams) or **online software** (e.g., Zoom)?

- Yes
- No

**During your remote work period**, does your organisation provide you with **working devices** (e.g., phone, computer or laptop) or **remote access to the working devices in the in-site office**?

- Yes, the organisation only provides me with working devices for remote work (a).
- Yes, the organisation only gives me remote access to the working devices in the in-site office (b).
- Yes, the organisation provides me with both working devices for remote work and remote access to working devices in the in-site office (c).
- No, neither of them is provided. I use my personal devices to perform tasks (d).

Does the working device(s) provided by your organisation **has (have) pre-installed applications or software** that can monitor employees' working behaviours and performance? (*display if the answer a or c in the previous question is selected*)

- Yes
- No

Does the **working device(s) in the in-site office** have pre-installed applications or software that can monitor employees' working behaviours and performance? (*display if the answer b or c in the previous question is selected*)

- Yes
- No

Does your organisation require you to install applications or software that can monitor employees' working behaviours and performance on **your personal devices**?

- Yes
- No

### **Job autonomy**

Based on your own remote work experience, please rate to what extent you agree or disagree with the following statements:

	<b>Strongly disagree</b>	<b>Neither agree nor disagree</b>			<b>Strongly agree</b>
	1	2	3	4	5
• I have significant autonomy in determining how I do my job.	1	2	3	4	5
• I can decide on my own how to go about doing my work.	1	2	3	4	5
• I have considerable opportunity for independence and freedom in how I do my job.	1	2	3	4	5

### Workplace isolation (adapted from Golden et al. 2008)

Based on your own remote work experience, please rate **how often** you experienced the following feelings or attitudes:

**During the period of working remotely:**

	Never	Sometimes			Always
	1	2	3	4	5
• I feel left out on activities and meetings that could enhance my career.	1	2	3	4	5
• I miss out on opportunities to be mentored.	1	2	3	4	5
• I miss the emotional support of coworkers.	1	2	3	4	5
• I feel out of the loop.	1	2	3	4	5
• I miss face-to-face contact with coworkers.	1	2	3	4	5
• I feel isolated.	1	2	3	4	5
• I miss informal interaction with others.	1	2	3	4	5

### Workplace isolation (adapted from Orhan et al. 2016)

Please rate to what extent you agree or disagree with the following statements:

**During the period of working remotely:**

	Strongly disagree		Neither agree nor disagree				Strongly agree	
	1	2	3	4	5	6	7	
• I am isolated from others at work.	1	2	3	4	5	6	7	
• I often feel left out.	1	2	3	4	5	6	7	
• I often miss having people around me.	1	2	3	4	5	6	7	
• I often feel I am no longer close to anyone at work.	1	2	3	4	5	6	7	
• I am separated from others whom I work with.	1	2	3	4	5	6	7	
• I often miss engaging in work-related informal chats with others.	1	2	3	4	5	6	7	
• I feel I miss a lot of information when I am not seeing people I work with.	1	2	3	4	5	6	7	
• I often miss the opportunity to meet key people who I work with.	1	2	3	4	5	6	7	
• I could resolve problems more quickly and effectively, if I had more chances to interact with face-to-face with others.	1	2	3	4	5	6	7	
• Informal discussions with people are an important part of my work.	1	2	3	4	5	6	7	

## Job burnout

Please indicate how often you have the following feelings or attitudes when you work remotely:

**When I work remotely,**

	Never			Sometimes			Always
<b>Emotional Exhaustion</b>							
• I feel emotionally drained from my work.	1	2	3	4	5	6	7
• I feel used up at the end of the workday.	1	2	3	4	5	6	7
• Working with people all day is really a strain for me.	1	2	3	4	5	6	7
• I feel burned out from my work.	1	2	3	4	5	6	7
• I feel fatigued when I get up in the morning and have to face another day on the job.	1	2	3	4	5	6	7
<b>Cynicism</b>							
• I have become less enthusiastic about my work.	1	2	3	4	5	6	7
• I have become more cynical about whether my work contributes anything.	1	2	3	4	5	6	7
• I just want to do my job and not be bothered.	1	2	3	4	5	6	7
• I doubt the significance of my work.	1	2	3	4	5	6	7
• I have become less interested in my jobs since I work remotely.	1	2	3	4	5	6	7
<b>Professional efficacy</b>							
• I can effectively solve the problems that arise in my work.	1	2	3	4	5	6	7
• I believe that I am making an effective contribution to what this organisation does.	1	2	3	4	5	6	7
• In my opinion, I am good at my job.	1	2	3	4	5	6	7
• I feel exhilarated when I achieve my work goals.	1	2	3	4	5	6	7
• I have accomplished many worthwhile things in this job.	1	2	3	4	5	6	7
• During my work, I feel confident that I am effective in getting things done.	1	2	3	4	5	6	7

## **EPM invasiveness**

### **EPM scope**

Based on your own remote work experience, are the following **electronic performance monitoring practices** used in your organisation?

Please respond to the following questions by selecting Yes or No.

#### **Does your organisation:**

- |   |     |    |
|---|-----|----|
| • monitor employees' e-mail content   | Yes | No |
| • monitor employees' working files  | Yes | No |
| • track employees' social media feeds   | Yes | No |
| • hold regular online meetings during the working time  | Yes | No |
| • monitor employees' computer usage (e.g., content and time)  | Yes | No |
| • require employees to provide daily report on their working activities   | Yes | No |
| • track employees' time at work with a time recording system  | Yes | No |
| • track employees' keystrokes and time spent at the keyboard  | Yes | No |
| • record employees' attendance at meetings or other organisational activities   | Yes | No |
| • require employees to share their screen during working time   | Yes | No |
| • monitor employees' activities by using facial recognition tools   | Yes | No |
| • require employees to keep cameras turned on during the working time   | Yes | No |
| • monitor employees' telephone use (e.g., phone tapping, time spent on call and numbers called)                                 | Yes | No |
| • track employees' physical position or geospatial movement (e.g., GPS tracking)  | Yes | No |
| • track employees' internet usage or activities (e.g., monitoring web browsing history and internet connection history)         | Yes | No |
| • incentivise wellness programs at work using FitBit or similar technology to monitor employees' physical activity              | Yes | No |
| • incentivise electronic medication sensors (e.g., heart rate checking tool) to monitor employees' physical activity and health | Yes | No |

### EPM target

Please indicate the extent of your agreement to the following statements by ticking a number from 1 to 7.

### The electronic performance monitoring practices used by your organisation capture:

	Strongly disagree		Neither agree nor disagree			Strongly agree	
• information about <b>employees' thoughts, feelings and physiology</b> (e.g., biometric information, social media feed, personal e-mail content)	1	2	3	4	5	6	7
• information about <b>employees' body or location</b> (e.g., video monitoring, GPS tracking)	1	2	3	4	5	6	7
• information about <b>employees' tasks or task behaviour</b> (e.g., keystroke tracking, working file monitoring)	1	2	3	4	5	6	7

### EPM constraints

Please rate to what extent your organisation has explicit policies on:

	Very little		Moderate			Very much	
• When electronic performance monitoring practices could occur	1	2	3	4	5	6	7
• How electronic performance monitoring practices occur	1	2	3	4	5	6	7
• How the collected monitoring data would be used	1	2	3	4	5	6	7
• Who could access the collected monitoring data	1	2	3	4	5	6	7

### EPM control

Please indicate the extent of your agreement to the following statements by ticking a number from 1 to 7.

*"Employees have input into **the design** of the electronic performance monitoring practices."*

- 1 Strongly disagree
- 2
- 3
- 4 Neither agree nor disagree
- 5
- 6
- 7 Strongly agree

Please rate to what extent employees have an opportunity to influence **the use** of electronic performance monitoring.

- 1 No opportunity
- 2
- 3
- 4 Moderate level of opportunity
- 5
- 6
- 7 Full opportunity

### **Other questions about EPM invasiveness**

Please rate to what extent **the intimacy of information** captured by the electronic performance monitoring practices used by your organisation **affects your attitudes towards monitoring**.

- 1 Not at all affected
- 2
- 3
- 4 Moderately affected
- 5
- 6
- 7 Affected to a great extent

Please rate how detailed your organisation communicates **the outcomes of monitoring with employees**.

- 1 Not communicated at all
- 2
- 3
- 4 Moderate level of detail
- 5
- 6
- 7 Extremely detailed

Overall, how do you rate **the level of invasiveness** of your organisation's use of electronic performance monitoring practices?

- 1 Very low
- 2
- 3
- 4 Moderate level
- 5
- 6
- 7 Very high

## Organisational CSR activities

Based on your understanding of the practices in your organisation, please respond to each of the following questions by ticking a number from 1 to 5 which **best reflects the practices of the organisation you work for.**

### My organisation:

	Never		Sometimes		Always
External CSR activities:					
• participates in activities which aim to protect and improve the quality of the natural environment	1	2	3	4	5
• makes investment to create a better life for future generations	1	2	3	4	5
• implements special programs to minimize its negative impact on the natural environment	1	2	3	4	5
• targets sustainable growth which considers future generations	1	2	3	4	5
• supports nongovernmental organisations working in problematic areas.	1	2	3	4	5
• contributes to campaigns and projects that promote the well-being of the society	1	2	3	4	5
• encourages its employees to participate in voluntarily activities	1	2	3	4	5
• emphasizes the importance of its social responsibilities to the society	1	2	3	4	5
Internal CSR activities:					
• implements flexible policies to provide a good work-and-life balance for its employees	1	2	3	4	5
• supports employees who want to acquire additional education	1	2	3	4	5
Operation related CSR activities:					
• respects consumer rights beyond the legal requirements	1	2	3	4	5
• provides full and accurate information about its products to its customers	1	2	3	4	5
• always pays its taxes on a regular and continuing basis	1	2	3	4	5
• complies with legal regulations completely and promptly	1	2	3	4	5

Please respond to each of the following questions by ticking a number from 1 to 5 which best reflects the practices of the organisation you work for.

<b>Internal CSR activities (continue):</b>	<b>Never</b>	<b>Sometimes</b>			<b>Always</b>
• The management of my organisation is primarily concerned with employees' needs and wants	1	2	3	4	5
• Our organisation's policies encourage employees to develop their skills and careers	1	2	3	4	5
• The managerial decisions related with the employees in my organisation are usually fair.	1	2	3	4	5
• Customer satisfaction is highly important for my organisation.	1	2	3	4	5

### **Organisational beliefs system**

Based on your understanding of the practices in your organisation, please indicate the extent to which to following statements describe your organisation.

	<b>Not descriptive</b>		<b>Moderately descriptive</b>			<b>Very descriptive</b>	
• My organisation's mission statement clearly communicates the organisation's core values to employees.	1	2	3	4	5	6	7
• Higher management communicates core values to employees.	1	2	3	4	5	6	7
• Employees are aware of the organisation's core values.	1	2	3	4	5	6	7
• My organisation's mission statement inspires employees.							

### **Organisational boundary system**

Please indicate your agreement with the following statements by ticking a number from 1 to 7:

	<b>Strongly disagree</b>		<b>Neither agree nor disagree</b>			<b>Strongly agree</b>	
• My organisation's core values are broadly supported within the organisation.	1	2	3	4	5	6	7
• In my organisation, the fit with core values is taken into account when hiring new employees.	1	2	3	4	5	6	7
• Employees are aware of the organisation's code of business conduct.	1	2	3	4	5	6	7
• My organisation relies on a code of business conduct to define appropriate behaviour for employees.	1	2	3	4	5	6	7

- My organisation's code of business conduct informs employees about behaviours that are off-limits. 1 2 3 4 5 6 7
- My organisation communicates to employees risks that should be avoided. 1 2 3 4 5 6 7
- In my organisation, manager relies on the organisation's ethical codes. 1 2 3 4 5 6 7
- Organisational members confront each other about compliance with behavioural codes. 1 2 3 4 5 6 7

**In the following sections, you will be asked questions about your feelings or perceptions about monitoring practices used by your organisation.**

**Perceived invasion of privacy:**

Based on your remote work experience, please indicate your agreement with the following statements by ticking a number from 1 to 5.

- |   | <b>Strongly disagree</b> |   |   |   |   | <b>Neither agree nor disagree</b> |   |  |  | <b>Strongly agree</b> |
|---|--------------------------|---|---|---|---|-----------------------------------|---|--|--|-----------------------|
| • I feel that my organisation's monitoring policies and the manners of monitoring are an invasion of privacy. | 1                        | 2 | 3 | 4 | 5 | 6                                 | 7 |  |  |                       |
| • The way that my organisation monitors its employees makes me feel uneasy.                                   | 1                        | 2 | 3 | 4 | 5 | 6                                 | 7 |  |  |                       |
| • I feel personally invaded by the practices used by my organisation to collect personal information.         | 1                        | 2 | 3 | 4 | 5 | 6                                 | 7 |  |  |                       |
| • I feel comfortable about the types of personal information that my organisation collects.                   | 1                        | 2 | 3 | 4 | 5 | 6                                 | 7 |  |  |                       |
| • I have little reason to be concerned about my privacy here in my organisation.                              | 1                        | 2 | 3 | 4 | 5 | 6                                 | 7 |  |  |                       |

**Monitoring fairness:**

Please indicate your agreement to the following statements by ticking a number from 1 to 7.

- |   | <b>Strongly disagree</b> |   |   |   |   | <b>Neither agree nor disagree</b> |   |  |  | <b>Strongly agree</b> |
|---|--------------------------|---|---|---|---|-----------------------------------|---|--|--|-----------------------|
| • Overall, the tools used in my organisation to monitor employee's working activities are fair. | 1                        | 2 | 3 | 4 | 5 | 6                                 | 7 |  |  |                       |
| • The procedures used to monitor my working activities are fair.                                | 1                        | 2 | 3 | 4 | 5 | 6                                 | 7 |  |  |                       |

- I believe the practices the organisation monitors employees' working activities are fair. 1 2 3 4 5 6 7
- It's important that you pay attention to this study. Please tick '3' for this question. 1 2 3 4 5 6 7  
[Attention check question]

### Sense of control

Please indicate your agreement with the following statements by ticking a number from 1 to 7.

- |   | <b>Strongly disagree</b> |  |   |  |   | <b>Neither agree nor disagree</b> |   |  |   | <b>Strongly agree</b> |   |  |   |
|---|--------------------------|--|---|--|---|-----------------------------------|---|--|---|-----------------------|---|--|---|
| • Other people determine most of what I can and cannot do at work.            | 1                        |  | 2 |  | 3 |                                   | 4 |  | 5 |                       | 6 |  | 7 |
| • There is little I can do to change many of the important things at my work. | 1                        |  | 2 |  | 3 |                                   | 4 |  | 5 |                       | 6 |  | 7 |
| • I often feel helpless in dealing with the problems at my work.              | 1                        |  | 2 |  | 3 |                                   | 4 |  | 5 |                       | 6 |  | 7 |
| • What happens to me at work is often beyond my control.                      | 1                        |  | 2 |  | 3 |                                   | 4 |  | 5 |                       | 6 |  | 7 |
| • There are many things that interfere with what I want to do at work.        | 1                        |  | 2 |  | 3 |                                   | 4 |  | 5 |                       | 6 |  | 7 |
| • I have little control over the things that happen to me at work.            | 1                        |  | 2 |  | 3 |                                   | 4 |  | 5 |                       | 6 |  | 7 |
| • There is really no way I can solve all the problems I have at work.         | 1                        |  | 2 |  | 3 |                                   | 4 |  | 5 |                       | 6 |  | 7 |
| • I sometimes feel I am being pushed around at work.                          | 1                        |  | 2 |  | 3 |                                   | 4 |  | 5 |                       | 6 |  | 7 |

### Acceptance of monitoring

Please respond to each of the following questions by ticking a number from 1 to 7.

What is your attitude towards the use of electronic performance monitoring practices by your organisation?

- 1 Extremely negative
- 2
- 3
- 4 Neutral
- 5
- 6
- 7 Extremely positive

To what extent do you like the electronic performance monitoring practices used by your organisation?

- 1 Not at all liked
- 2
- 3
- 4 Moderately like
- 5
- 6
- 7 Liked to a great extent

To what extent do you enjoy electronic performance monitoring practices used by your organisation?

- 1 Not at all enjoyed
- 2
- 3
- 4 Moderately enjoyed
- 5
- 6
- 7 Enjoyed to a great extent

How willing are you to utilise electronic performance monitoring practices to improve your performance?

- 1 Extremely unwilling
- 2
- 3
- 4 Neutral
- 5
- 6
- 7 Extremely willing

Now we will ask some questions about your opinions and feelings about your organisation when you work remotely.

### Trust in the organisation

Please indicate your agreement to the following statements by ticking a number from 1 to 5.

	<b>Strongly disagree</b>		<b>Neither agree nor disagree</b>		<b>Strongly agree</b>
• I believe my organisation has high integrity.	1	2	3	4	5
• I can expect my organisation to treat me in a consistent and predictable fashion.	1	2	3	4	5
• My organisation is not always honest and truthful.	1	2	3	4	5
• In general, I believe my organisation's motives and intentions are good.	1	2	3	4	5
• I don't think my organisation treats me fairly.	1	2	3	4	5
• My organisation is open and upfront with me.	1	2	3	4	5
• I'm not sure I fully trust my organisation.	1	2	3	4	5

### Pride in membership

Please indicate your agreement with the following statements by ticking a number from 1 to 5.

	<b>Strongly disagree</b>		<b>Neither agree nor disagree</b>		<b>Strongly agree</b>
• I feel proud to be an employee of this organisation.	1	2	3	4	5
• I feel proud to tell others that I work for this organisation.	1	2	3	4	5
• I feel proud to identify myself personally with this organisation.	1	2	3	4	5
• I am proud to be part of this organisation.	1	2	3	4	5

### Value congruence

Please indicate your agreement with the following statements by ticking a number from 1 to 5.

	<b>Strongly disagree</b>		<b>Neither agree nor disagree</b>		<b>Strongly agree</b>
• I feel my values "match" or fit this organisation.	1	2	3	4	5
• My values match those of the current employees in this organisation.	1	2	3	4	5
• The values and "personality" of this organisation reflect my own values and personality.	1	2	3	4	5

### Job engagement

Please read each statement carefully and tick a number from 1 to 7 to indicate how much each of the following statements reflects your feelings about your job.

#### During the period of working remotely:

	Never		Sometimes			Always	
• At my work, I feel bursting with energy.	1	2	3	4	5	6	7
• At my job, I feel strong and vigorous.	1	2	3	4	5	6	7
• I am enthusiastic about my job.	1	2	3	4	5	6	7
• My job inspires me.	1	2	3	4	5	6	7
• When I get up in the morning, I feel like going to work.	1	2	3	4	5	6	7
• I feel happy when I am working intensely.	1	2	3	4	5	6	7
• I am proud of the work that I do.	1	2	3	4	5	6	7
• I am immersed in my work.	1	2	3	4	5	6	7
• I get carried away when I am working.	1	2	3	4	5	6	7

### EPM invasiveness (3 reflective measurement items)

Based on your understanding of the practices in your organisation, please indicate your agreement with the following statements by ticking a number from 1 to 7.

	Strongly disagree		Neither agree nor disagree			Strongly agree	
• Electronic performance monitoring practices used by my organisation intrude on employees' privacy.	1	2	3	4	5	6	7
• Electronic performance monitoring practices used by my organisation intrude on employees' autonomy.	1	2	3	4	5	6	7
• Electronic performance monitoring practices used by my organisation intrude on employees' sense of personal boundaries.	1	2	3	4	5	6	7

### Employee identification

Please rate the extent to which you identify with the organisation by ticking a number from 1 to 7.

- 1 Not at all identified
- 2
- 3
- 4 Moderately identified
- 5
- 6
- 7 Extremely identified

**Demographics and debriefing questions:**

Please indicate your current employment status.

- Employed (full-time)
- Employed (part-time)
- Unemployed
- Other (please specify)

Are you currently working remotely?

- Yes, I am.
- No, I am not.

Do you have remote work experience **before** the COVID-19 pandemic?

- Yes, I have.
- No. I haven't.

Do you work remotely **during** the COVID-19 pandemic?

- Yes
- No

Do you have any agreement with your organisation about such work arrangement before you work remotely?

- Yes, I have.
- No. I haven't.

**Based on your own remote work experience, please respond to each of the following questions by ticking a number from 1 to 7.**

Please rate your satisfaction with your current job when you work remotely.

- 1 Not at all satisfied
- 2
- 3
- 4 Moderately satisfied
- 5
- 6
- 7 Extremely satisfied

To what extent has your job satisfaction **changed after the** use of electronic performance monitoring practices?

- 1 Significantly decreased
- 2
- 3

- 4 About the same
- 5
- 6
- 7 Significantly increased

Please rate the level of your physical health when you work remotely.

- 1 Not very good
- 2
- 3
- 4 Neutral
- 5
- 6
- 7 Very good

To what extent has your physical health **changed** after the use of electronic performance monitoring practices?

- 1 Significantly decreased
- 2
- 3
- 4 About the same
- 5
- 6
- 7 Significantly improved

Please rate the extent of your **intention to exit the organisation** following the start of the implementing of electronic monitoring practices.

- 1 Very little
- 2
- 3
- 4 Neutral
- 5
- 6
- 7 Very much

For the period of working remotely, please rate the level of your performance compared to your co-workers in a similar position at the same level.

- 1 A lot lower than average
- 2
- 3
- 4 About the same with average
- 5
- 6

- 7 A lot higher than average

To what extent has your performance **changed** after the use of electronic performance monitoring practices?

- 1 Significantly decreased
- 2
- 3
- 4 About the same
- 5
- 6
- 7 Significantly improved

To what extent has the COVID-19 influenced the effect of electronic monitoring practices on your performance?

- 1 Very little
- 2
- 3
- 4 Neutral
- 5
- 6
- 7 Very much

On average, how many hours per week do you spend on work during the remote work period (in hour): \_\_\_\_\_

This is an attention check question. Please enter the word "puce" in the text box below.

\_\_\_\_\_

Please indicate your age (in years): \_\_\_\_\_

What is your gender?

- Male
- Female
- Other

What is the highest level of education you have completed?

- Secondary
- Tertiary (undergraduate degree)
- Tertiary (postgraduate degree)
- Other (please specify): \_\_\_\_\_

Which of the following most closely matches your job level:

- Intern
- Entry Level
- Analyst / Associate
- Manager
- Senior Manager
- Director
- Other (Please specify): \_\_\_\_\_

Please indicate how long you have been **remotely working** in your current organisation (in years): \_\_\_\_\_

Please select an answer in the box to indicates which of the following categories best describes the industry you primarily work in (regardless of your actual position).

▼ Agriculture, Forestry, Fishing and Hunting ... Other Industry. Please specify: \_\_\_\_\_

How would you best describe yourself?

- Caucasian
- Latino/Hispanic
- Middle Eastern
- African
- Caribbean
- Asian
- Other (Please specify): \_\_\_\_\_
- Prefer not to say

What is your religious belief?

- Christian (Catholic protestant or any other Christian denominations)
- Buddhist
- Hindu
- Muslim
- Jewish
- Sikh
- Any other religion (Please specify): \_\_\_\_\_
- No Religion
- Prefer not to say

Congratulations! You have answered all questions. Please click "Next" to submit your responses and get the URL link to claim your remuneration!

-----End of Survey-----

## Appendix D: Robustness Tests (Chapter 3)

### Measure EPM ST and EPM CC using equally weighted method

**Table 3.12: Results of simple mediation effect (Independent variable: *EPM ST*; Mediator: *SOC*)**

Panel A: Direct effect (linear)						
	Direct effect	SE	<i>t</i> -value	<i>p</i> -value		
H1: <i>EPM_ST</i> – <i>WI</i>	0.0535	0.0401	1.3332	0.1831		
H2: <i>EPM_ST</i> – <i>SOC</i>	-0.3052	0.0626	-4.8748	0.0000		
H3: <i>SOC</i> – <i>WI</i>	-0.1191	0.0295	-4.0389	0.0001		
Panel B: Direct and indirect effect (PROCESS)						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Total effect	0.0535	0.0401	1.3332	0.1831	-0.0503	0.1574
Direct effect: <i>EPM_ST</i> – <i>WI</i>	0.0172	0.0405	0.4245	0.6714	-0.0876	0.1220
H4: Indirect effect: <i>EPM_ST</i> – <i>SOC</i> – <i>WI</i>	0.0363	0.0119			0.0097	0.0718
Panel C: Sobel test of indirect effect						
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value		
H4: <i>EPM_ST</i> – <i>SOC</i> – <i>WI</i>	0.0363	0.0117	3.1115	0.0019		
Panel D: Bootstrapping approach of indirect effect						
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
H4: <i>EPM_ST</i> – <i>SOC</i> – <i>WI</i>	0.0222	0.0091	2.4632	0.0138	0.0027	0.0503

*Notes:* LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error; *EPM\_ST*: the invasive use of EPM. *EPM\_ST* is measured as the average value based on the score of EPM scope and EPM target. *SOC*: sense of control; *WI*: workplace isolation. Bootstrap sample size = 5000.

**Table 3.13: Results of simple mediation effect (Independent variable: *EPM ST*; Mediator: *EPM CC*)**

Panel A: Direct effect (linear)							
	Direct effect	SE	<i>t</i> -value	<i>p</i> -value			
	<i>EPM_ST</i> – <i>SOC</i>	-0.3052	0.0626	-4.8748	0.0000		
H5:	<i>EPM_ST</i> – <i>EPM_CC</i>	0.2657	0.0533	4.9903	0.0000		
H6:	<i>EPM_CC</i> – <i>SOC</i>	0.2424	0.0538	4.5039	0.0000		
Panel B: Direct and indirect effect (PROCESS)							
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI	
	Total effect	-0.3052	0.0626	-4.8748	0.0000	-0.4671	-0.1432
	Direct effect: <i>EPM_ST</i> – <i>SOC</i>	-0.3696	0.0630	-5.8692	0.0000	-0.5324	-0.2067
H7:	Indirect effect: <i>EPM_ST</i> – <i>EPM_CC</i> – <i>SOC</i>	0.0644	0.0208			0.0212	0.1283
Panel C: Sobel test of indirect effect							
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value			
H7:	<i>EPM_ST</i> – <i>EPM_CC</i> – <i>SOC</i>	0.0644	0.0193	3.3426	0.0008		
Panel D: Bootstrapping approach of indirect effect							
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI	
H7:	<i>EPM_ST</i> – <i>EPM_CC</i> – <i>SOC</i>	0.1069	0.0247	4.3163	0.0000	0.0508	0.1755

Notes: LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error; *EPM\_ST*: the invasive use of EPM; *EPM\_CC*: the organisation’s policies and actions on EPM. *EPM\_ST* is measured as the average value based on the score of EPM scope and EPM target. *EPM\_CC* is calculated as the average of EPM constraints and EPM control scores. *SOC*: sense of control; *WI*: workplace isolation. Bootstrap sample size = 5000.

**Table 3.14: Results of sequential mediation effect (Independent variable: *EPM ST*; Mediator 1: *EPM CC*; Mediator 2: *SOC*)**

<i>Panel A: Regression results</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>WI regressed on:</i>						
Constant	2.2273	0.5033	4.4251	0.0000	0.9254	3.5292
<i>EPM_ST</i>	0.0280	0.0421	0.6661	0.5057	-0.0808	0.1368
<i>EPM_CC</i>	-0.0339	0.0354	-0.9570	0.3391	-0.1255	0.0577
<i>SOC</i>	-0.1131	0.0301	-3.7545	0.0002	-0.1911	-0.0352
Gender	0.0261	0.0892	0.2930	0.7697	-0.2045	0.2568
Age	0.0013	0.0043	0.2894	0.7724	-0.0100	0.0125
Highest degree	-0.0559	0.0624	-0.8972	0.3701	-0.2172	0.1053
Job level	0.2106	0.0961	2.1927	0.0288	-0.0378	0.4591
Tenure	-0.0052	0.0086	-0.5985	0.5498	-0.0275	0.0171
Remote month	-0.0127	0.0058	-2.1788	0.0299	-0.0278	0.0024
Personality ( <i>P_EXTRA</i> )	0.1360	0.0404	3.3633	0.0008	0.0314	0.2405
Personality ( <i>P_AGREE</i> )	0.0418	0.0605	0.6898	0.4907	-0.1148	0.1983
Personality ( <i>P_CONSCI</i> )	0.0379	0.0557	0.6800	0.4968	-0.1063	0.1821
Personality ( <i>P_NEURO</i> )	0.0924	0.0470	1.9675	0.0497	-0.0291	0.2139
Personality ( <i>P_OPEN</i> )	-0.0077	0.0460	-0.1668	0.8676	-0.1267	0.1114
Industry FE				Yes		
R-sq = 0.1069						
<i>Panel B: Mediating effect</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Total effect	0.0535	0.0401	1.3332	0.1831	-0.0503	0.1574
Direct effect: <i>EPM_ST</i> – <i>WI</i>	0.0280	0.0421	0.6661	0.5057	-0.0808	0.1368
Indirect effects:	Effect	BootSE			BootLLCI	BootULCI
Total	0.0255	0.0168			-0.0184	0.0719
<i>EPM_ST</i> – <i>EPM_CC</i> – <i>WI</i>	-0.0090	0.0099			-0.0372	0.0158
<i>EPM_ST</i> – <i>SOC</i> – <i>WI</i>	0.0418	0.0139			0.0106	0.0832
H8: <i>EPM_ST</i> – <i>EPM_CC</i> – <i>SOC</i> – <i>WI</i>	-0.0073	0.0034			-0.0196	-0.0013

*Notes:* LL: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. *EPM\_ST*: the invasive use of EPM; *EPM\_CC*: the organisation’s policies and actions on EPM. *EPM\_ST* is measured as the average value based on the score of EPM scope and EPM target. *EPM\_CC* is calculated as the average of EPM constraints and EPM control scores. *SOC*: sense of control; *WI*: workplace isolation. Bootstrap sample size = 5000.

## Measure EPM ST using EPM scope

**Table 3.15: Results of simple mediation effect (Independent variable: *SCOPE*; Mediator: *SOC*)**

Panel A: Direct effect (linear)						
	Direct effect	SE	<i>t</i> -value	<i>p</i> -value		
H1: <i>SCOPE</i> – <i>WI</i>	0.0269	0.0374	0.7173	0.4736		
H2: <i>SCOPE</i> – <i>SOC</i>	-0.2441	0.0587	-4.1605	0.0000		
H3: <i>SOC</i> – <i>WI</i>	-0.1223	0.0293	-4.1757	0.0000		
Panel B: Direct and indirect effect (PROCESS)						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Total effect	0.0269	0.0374	0.7173	0.4736	-0.0700	0.1237
Direct effect: <i>SCOPE</i> – <i>WI</i>	-0.0030	0.0375	-0.0802	0.9361	-0.0999	0.0939
H4: Indirect effect: <i>SCOPE</i> – <i>SOC</i> – <i>WI</i>	0.0299	0.0103			0.0082	0.0610
Panel C: Sobel test of indirect effect						
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value		
H4: <i>SCOPE</i> – <i>SOC</i> – <i>WI</i>	0.0299	0.0101	2.9460	0.0032		
Panel D: Bootstrapping approach of indirect effect						
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
H4: <i>SCOPE</i> – <i>SOC</i> – <i>WI</i>	0.0158	0.0077	2.0537	0.0400	-0.0013	0.0393

Notes: LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error; *SCOPE*: the scope of EPM; *SOC*: sense of control; *WI*: workplace isolation. Bootstrap sample size = 5000.

**Table 3.16: Results of simple mediation effect (Independent variable: *SCOPE*; Mediator: *EPM CC*)**

<i>Panel A: Direct effect (linear)</i>							
	Direct effect	SE	<i>t</i> -value	<i>p</i> -value			
	<i>SCOPE</i> – <i>SOC</i>	-0.2441	0.0587	-4.1605	0.0000		
H5:	<i>SCOPE</i> – <i>EPM_CC</i>	0.2965	0.0728	4.0717	0.0001		
H6:	<i>EPM_CC</i> – <i>SOC</i>	0.1496	0.0370	4.0371	0.0001		
<i>Panel B: Direct and indirect effect (PROCESS)</i>							
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI	
	Total effect	-0.2441	0.0587	-4.1605	0.0000	-0.3959	-0.0924
	Direct effect: <i>SCOPE</i> – <i>SOC</i>	-0.2885	0.0588	-4.9094	0.0000	-0.4405	-0.1365
H7:	Indirect effect: <i>SCOPE</i> – <i>EPM_CC</i> – <i>SOC</i>	0.0443	0.0164			0.0103	0.0939
<i>Panel C: Sobel test of indirect effect</i>							
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value			
H7:	<i>SCOPE</i> – <i>EPM_CC</i> – <i>SOC</i>	0.0444	0.0155	2.8694	0.0041		
<i>Panel D: Bootstrapping approach of indirect effect</i>							
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI	
H7:	<i>SCOPE</i> – <i>EPM_CC</i> – <i>SOC</i>	0.0722	0.0192	3.6258	0.0003	0.0292	0.1279

Notes: LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error; *SCOPE*: the scope of EPM; *EPM\_CC*: the organisation's policies and actions on EPM; *SOC*: sense of control. Bootstrap sample size = 5000.

**Table 3.17: Results of sequential mediation effect (Independent variable: *SCOPE*; Mediator 1: *EPM CC*; Mediator 2: *SOC*)**

<i>Panel A: Regression results</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>WI regressed on:</i>						
Constant	2.3089	0.4970	4.6459	0.0000	1.0234	3.5944
<i>SCOPE</i>	0.0040	0.0384	0.1040	0.9172	-0.0954	0.1034
<i>EPM_CC</i>	-0.0199	0.0240	-0.8262	0.4091	-0.0820	0.0423
<i>SOC</i>	-0.1177	0.0298	-3.9484	0.0001	-0.1948	-0.0406
Gender	0.0263	0.0893	0.2945	0.7685	-0.2047	0.2573
Age	0.0011	0.0043	0.2489	0.8036	-0.0101	0.0123
Highest degree	-0.0570	0.0624	-0.9139	0.3612	-0.2184	0.1043
Job level	0.2172	0.0959	2.2651	0.0240	-0.0308	0.4652
Tenure	-0.0051	0.0086	-0.5914	0.5545	-0.0274	0.0172
Remote month	-0.0130	0.0058	-2.2265	0.0265	-0.0281	0.0021
Personality ( <i>P_EXTRA</i> )	0.1368	0.0404	3.3815	0.0008	0.0322	0.2414
Personality ( <i>P_AGREE</i> )	0.0414	0.0606	0.6832	0.4949	-0.1153	0.1980
Personality ( <i>P_CONSCI</i> )	0.0425	0.0555	0.7646	0.4449	-0.1012	0.1861
Personality ( <i>P_NEURO</i> )	0.0915	0.0470	1.9474	0.0521	-0.0300	0.2130
Personality ( <i>P_OPEN</i> )	-0.0088	0.0461	-0.1917	0.8481	-0.1280	0.1103
Industry FE				Yes		
R-sq = 0.1061						
<i>Panel B: Mediating effect</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Total effect	0.0269	0.0374	0.7173	0.4736	-0.0700	0.1237
Direct effect: <i>SCOPE</i> – <i>WI</i>	0.0040	0.0384	0.1040	0.9172	-0.0954	0.1034
Indirect effects:	Effect	BootSE			BootLLCI	BootULCI
Total	0.0229	0.0137			-0.0113	0.0603
<i>SCOPE</i> – <i>EPM_CC</i> – <i>WI</i>	-0.0059	0.0076			-0.0274	0.0141
<i>SCOPE</i> – <i>SOC</i> – <i>WI</i>	0.0340	0.0115			0.0093	0.0685
H8: <i>SCOPE</i> – <i>EPM_CC</i> – <i>SOC</i> – <i>WI</i>	-0.0052	0.0024			-0.0139	-0.0009
Note: LL: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. <i>SCOPE</i> : the scope of EPM; <i>EPM_CC</i> : the organisation’s policies and actions on EPM; <i>SOC</i> : sense of control; <i>WI</i> : workplace isolation. Bootstrap sample size = 5000.						

## Measure EPM ST using EPM target

**Table 3.18: Results of simple mediation effect (Independent variable: *TARGET*; Mediator: *SOC*)**

<i>Panel A: Direct effect (linear)</i>						
	Direct effect	SE	<i>t</i> -value	<i>p</i> -value		
H1: <i>TARGET</i> – <i>WI</i>	0.0376	0.0236	1.5920	0.1121		
H2: <i>TARGET</i> – <i>SOC</i>	-0.1601	0.0371	-4.3217	0.0000		
H3: <i>SOC</i> – <i>WI</i>	-0.1172	0.0293	-4.0000	0.0001		
<i>Panel B: Direct and indirect effect (PROCESS)</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Total effect	0.0376	0.0236	1.5920	0.1121	-0.0235	0.0987
Direct effect: <i>TARGET</i> – <i>WI</i>	0.0188	0.0237	0.7941	0.4276	-0.0425	0.0802
H4: Indirect effect: <i>TARGET</i> – <i>SOC</i> – <i>WI</i>	0.0188	0.0066			0.0050	0.0382
<i>Panel C: Sobel test of indirect effect</i>						
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value		
H4: <i>TARGET</i> – <i>SOC</i> – <i>WI</i>	0.0188	0.0064	2.9336	0.0034		
<i>Panel D: Bootstrapping approach of indirect effect</i>						
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
H4: <i>TARGET</i> – <i>SOC</i> – <i>WI</i>	0.0129	0.0052	2.4431	0.0146	0.0020	0.0278

Notes: LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error; *TARGET*: the target of EPM; *SOC*: sense of control; *WI*: workplace isolation. Bootstrap sample size = 5000.

**Table 3.19: Results of simple mediation effect (Independent variable: *TARGET*; Mediator: *EPM CC*)**

<i>Panel A: Direct effect (linear)</i>							
	Direct effect	SE	<i>t</i> -value	<i>p</i> -value			
	<i>TARGET</i> – <i>SOC</i>	-0.1601	0.0371	-4.3217	0.0000		
H5:	<i>TARGET</i> – <i>EPM_CC</i>	0.2087	0.0458	0.2024	4.5532		
H6:	<i>EPM_CC</i> – <i>SOC</i>	0.1555	0.0371	0.1910	4.1916		
<i>Panel B: Direct and indirect effect (PROCESS)</i>							
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI	
	Total effect	-0.1601	0.0371	-4.3217	0.0000	-0.2560	-0.0643
	Direct effect: <i>TARGET</i> – <i>SOC</i>	-0.1926	0.0372	-5.1752	0.0000	-0.2889	-0.0963
H7:	Indirect effect: <i>TARGET</i> – <i>EPM_CC</i> – <i>SOC</i>	0.0325	0.0112			0.0098	0.0658
<i>Panel C: Sobel test of indirect effect</i>							
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value			
H7:	<i>TARGET</i> – <i>EPM_CC</i> – <i>SOC</i>	0.0325	0.0105	3.0849	0.0020		
<i>Panel D: Bootstrapping approach of indirect effect</i>							
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI	
H7:	<i>TARGET</i> – <i>EPM_CC</i> – <i>SOC</i>	0.0571	0.0144	4.0940	0.0000	0.0245	0.1009

Notes: LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error; *TARGET*: the target of EPM; *EPM\_CC*: the organisation's policies and actions on EPM; *SOC*: sense of control. Bootstrap sample size = 5000.

**Table 3.20: Results of sequential mediation effect (Independent variable: *TARGET*; Mediator 1: *EPM CC*; Mediator 2: *SOC*)**

<i>Panel A: Regression results</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>WI regressed on:</i>						
Constant	2.1937	0.4992	4.3941	0.0000	0.9024	3.4850
<i>TARGET</i>	0.0251	0.0244	1.0261	0.3054	-0.0381	0.0883
<i>EPM_CC</i>	-0.0253	0.0241	-1.0497	0.2944	-0.0878	0.0371
<i>SOC</i>	-0.1112	0.0299	-3.7238	0.0002	-0.1885	-0.0340
Gender	0.0294	0.0891	0.3301	0.7415	-0.2012	0.2600
Age	0.0015	0.0043	0.3468	0.7289	-0.0097	0.0128
Highest degree	-0.0543	0.0624	-0.8703	0.3846	-0.2156	0.1070
Job level	0.2076	0.0959	2.1654	0.0309	-0.0404	0.4557
Tenure	-0.0051	0.0086	-0.5932	0.5534	-0.0274	0.0172
Remote month	-0.0126	0.0058	-2.1687	0.0306	-0.0277	0.0024
Personality ( <i>P_EXTRA</i> )	0.1354	0.0404	3.3514	0.0009	0.0309	0.2399
Personality ( <i>P_AGREE</i> )	0.0437	0.0605	0.7212	0.4712	-0.1129	0.2002
Personality ( <i>P_CONSCI</i> )	0.0354	0.0557	0.6350	0.5258	-0.1087	0.1794
Personality ( <i>P_NEURO</i> )	0.0929	0.0469	1.9803	0.0483	-0.0285	0.2143
Personality ( <i>P_OPEN</i> )	-0.0072	0.0460	-0.1574	0.8750	-0.1262	0.1117
Industry FE				Yes		
R-sq = 0.1081						
<i>Panel B: Mediating effect</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Total effect	0.0376	0.0236	1.5920	0.1121	-0.0235	0.0987
Direct effect: <i>TARGET</i> – <i>WI</i>	0.0251	0.0244	1.0261	0.3054	-0.0381	0.0883
Indirect effects:	Effect	BootSE			BootLLCI	BootULCI
Total	0.0125	0.0090			-0.0096	0.0370
<i>TARGET</i> – <i>EPM_CC</i> – <i>WI</i>	-0.0053	0.0053			-0.0209	0.0094
<i>TARGET</i> – <i>SOC</i> – <i>WI</i>	0.0214	0.0074			0.0050	0.0427
H8: <i>TARGET</i> – <i>EPM_CC</i> – <i>SOC</i> – <i>WI</i>	-0.0036	0.0018			-0.0099	-0.0005

Note: LL: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. *TARGET*: the target of EPM; *EPM\_CC*: the organisation’s policies and actions on EPM; *SOC*: sense of control; *WI*: workplace isolation. Bootstrap sample size = 5000.

## Appendix E: Robustness Tests (Chapter 4)

### Measuring EPM ST using EPM scope

**Table 4.17: Results of simple mediation effect (Independent variable: *SCOPE*; Mediator: *BURNOUT*)**

Panel A: Direct effect (linear)						
	Direct effect	SE	<i>t</i> -value	<i>p</i> -value		
H1: <i>SCOPE</i> – <i>SELFPPF</i>	0.0118	0.0335	0.3523	0.7248		
H2: <i>SCOPE</i> – <i>BURNOUT</i>	0.0991	0.0383	2.5866	0.0100		
H3: <i>BURNOUT</i> – <i>SELFPPF</i>	-0.2039	0.0397	-5.1341	0.0000		
Panel B: Direct and indirect effect (PROCESS)						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -Value	LL 99% CI	UL 99% CI
Total effect	0.0118	0.0335	0.3523	0.7248	-0.0748	0.0984
Direct effect: <i>SCOPE</i> – <i>SELFPPF</i>	0.0320	0.0328	0.9753	0.3299	-0.0529	0.1169
H4: Indirect effect: <i>SCOPE</i> – <i>BURNOUT</i> – <i>SELFPPF</i>	-0.0202	0.0094			-0.0508	0.0001
Panel C: Sobel test of indirect effect						
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value		
H4: <i>SCOPE</i> – <i>BURNOUT</i> – <i>SELFPPF</i>	-0.0202	0.0087	-2.3108	0.0208		
Panel D: Bootstrapping approach of indirect effect						
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
H4: <i>SCOPE</i> – <i>BURNOUT</i> – <i>SELFPPF</i>	-0.0123	0.0113	-1.2453	0.2130	-0.0467	0.0146

Notes: LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error; *SCOPE*: the scope of EPM; *SELFPPF* refers to employee performance; *BURNOUT* refers to employee burnout. Bootstrap sample size = 5000.

**Table 4.18 Results for moderating effect of external CSR activities on the direct link between EPM scope and employee performance (Independent variable: *SCOPE*; Moderator: *EXTCSR*)**

*Panel A: Regression results*

	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>SELFPF regressed on:</i>						
Constant	3.6332	0.5011	7.2500	0.0000	2.3370	4.9295
<i>SCOPE</i>	-0.2244	0.0920	-2.4377	0.0152	-0.4624	0.0137
<i>EXTCSR</i>	-0.1012	0.1001	-1.0106	0.3127	-0.3603	0.1578
<i>SCOPE</i> × <i>EXTCSR</i>	0.0762	0.0293	2.5989	0.0097	0.0004	0.1520
<i>Gender</i>	0.0238	0.0797	0.2985	0.7654	-0.1824	0.2300
<i>Age</i>	-0.0017	0.0039	-0.4383	0.6614	-0.0117	0.0083
<i>Highest degree</i>	0.0282	0.0548	0.5149	0.6069	-0.1135	0.1699
<i>Job level</i>	0.2199	0.0849	2.5902	0.0099	0.0003	0.4394
<i>Tenure</i>	-0.0041	0.0078	-0.5290	0.5971	-0.0242	0.0160
<i>Remote month</i>	0.0048	0.0052	0.9278	0.3540	-0.0087	0.0183
Personality ( <i>P_EXTRA</i> )	0.0098	0.0361	0.2727	0.7852	-0.0835	0.1032
Personality ( <i>P_AGREE</i> )	0.0929	0.0538	1.7282	0.0846	-0.0461	0.2320
Personality ( <i>P_CONSCI</i> )	0.0474	0.0497	0.9530	0.3411	-0.0812	0.1760
Personality ( <i>P_NEURO</i> )	-0.0270	0.0416	-0.6507	0.5156	-0.1346	0.0805
Personality ( <i>P_OPEN</i> )	0.0323	0.0411	0.7865	0.4320	-0.0739	0.1385
Industry FE				Yes		
R-sq = 0.1245						

*Panel B: Conditional direct effects of EPM scope on employee performance at three levels of external CSR activities*

Direct effect: *SCOPE* – *SELFPF*

Moderator: <i>EXTCSR</i>	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
-1 SD (1.8861)	-0.0807	0.0450	-1.7907	0.0740	-0.1972	0.0359
Mean (2.8747)	-0.0053	0.0331	-0.1613	0.8719	-0.0909	0.0803
+1 SD (3.8634)	0.0700	0.0429	1.6312	0.1035	-0.0410	0.1810

*Note:* LL: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample *SCOPE*: the scope of EPM; *SELFPF* refers to employee performance. *EXTCSR* is measured as the level of external CSR activities as a continuous variable using the summated mean values of the respective items. This study includes the following control variables: *Gender* refers to the gender of employees. *Age* refers to the age of employees. *Job level* is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. *Tenure* refers to the work experience of an employee. *Highest degree* captures the highest education level of an employee. *Remote Month* refers to the cumulative number of months that employees work remotely in the last 24 months. Personality is measured in five dimensions, including extraversion, agreeableness, conscientiousness, neuroticism, and openness.

**Table 4.19 Results for moderating effect of external CSR activities on the direct link between EPM scope and employee burnout (Independent variable: *SCOPE*; Moderator: *EXTCSR*)**

*Panel A: Regression results*

	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>BURNOUT</i> regressed on:						
Constant	3.5715	0.5540	6.4462	0.0000	2.1384	5.0046
<i>SCOPE</i>	0.3429	0.1018	3.3701	0.0008	0.0797	0.6061
<i>EXTCSR</i>	-0.0695	0.1107	-0.6279	0.5304	-0.3559	0.2169
<i>SCOPE</i> × <i>EXTCSR</i>	-0.0736	0.0324	-2.2715	0.0236	-0.1575	0.0102
<i>Gender</i>	0.0294	0.0881	0.3334	0.7390	-0.1985	0.2573
<i>Age</i>	-0.0131	0.0043	-3.0612	0.0023	-0.0241	-0.0020
<i>Highest degree</i>	0.0701	0.0606	1.1575	0.2477	-0.0866	0.2267
<i>Job level</i>	0.0056	0.0938	0.0596	0.9525	-0.2371	0.2483
<i>Tenure</i>	0.0015	0.0086	0.1701	0.8650	-0.0207	0.0236
Remote month	-0.0011	0.0058	-0.1871	0.8517	-0.0160	0.0139
Personality ( <i>P_EXTRA</i> )	-0.0558	0.0399	-1.3990	0.1625	-0.1590	0.0474
Personality ( <i>P_AGREE</i> )	-0.1387	0.0594	-2.3341	0.0200	-0.2925	0.0150
Personality ( <i>P_CONSCI</i> )	-0.1603	0.0550	-2.9160	0.0037	-0.3025	-0.0181
Personality ( <i>P_NEURO</i> )	0.2670	0.0460	5.8109	0.0000	0.1482	0.3859
Personality ( <i>P_OPEN</i> )	0.0601	0.0454	1.3241	0.1861	-0.0573	0.1776
Industry FE				Yes		
R-sq = 0.3631						

*Panel B: Conditional direct effects of EPM scope on employee burnout at three levels of external CSR activities*

Direct effect: *SCOPE* – *BURNOUT*

Moderator: <i>EXTCSR</i>	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
-1 SD (1.8861)	0.2041	0.0498	4.0976	0.0000	0.0753	0.3329
Mean (2.8747)	0.1313	0.0366	3.5886	0.0004	0.0367	0.2259
+1 SD (3.8634)	0.0585	0.0474	1.2332	0.2181	-0.0642	0.1812

*Note:* LL: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5000. *SCOPE*: the scope of EPM; *BURNOUT* refers to employee burnout, which is characterised by exhaustion, cynicism and reduced professional efficacy. *EXTCSR* is measured as the level of external CSR activities as a continuous variable using the summated mean values of the respective items. This study includes the following control variables: *Gender* refers to the gender of employees. *Age* refers to the age of employees. *Job level* is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. *Tenure* refers to the work experience of an employee. *Highest degree* captures the highest education level of an employee. *Remote Month* refers to the cumulative number of months that employees work remotely in the last 24 months. Personality is measured in five dimensions, including extraversion, agreeableness, conscientiousness, neuroticism, and openness.

**Table 4.20: Results for moderated mediation effect of external CSR activities on the indirect link between EPM scope and employee performance via burnout (Independent variable: *SCOPE*)**

*Panel A: Regression results*

	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>SLELFPF regressed on:</i>						
Constant	4.2296	0.5150	8.2121	0.0000	2.8973	5.5618
<i>SCOPE</i>	-0.1671	0.0917	-1.8228	0.0690	-0.4042	0.0700
<i>BURNOUT</i>	-0.1670	0.0417	-4.0064	0.0001	-0.2748	-0.0592
<i>EXTCSR</i>	-0.1128	0.0986	-1.1445	0.2530	-0.3678	0.1422
<i>SCOPE</i> × <i>EXTCSR</i>	0.0639	0.0290	2.2029	0.0281	-0.0111	0.1389
<i>Gender</i>	0.0287	0.0784	0.3659	0.7146	-0.1742	0.2316
<i>Age</i>	-0.0039	0.0038	-1.0095	0.3133	-0.0138	0.0061
<i>Highest degree</i>	0.0399	0.0540	0.7394	0.4600	-0.0997	0.1795
<i>Job level</i>	0.2208	0.0835	2.6438	0.0085	0.0048	0.4368
<i>Tenure</i>	-0.0039	0.0076	-0.5057	0.6133	-0.0236	0.0159
<i>Remote month</i>	0.0047	0.0051	0.9078	0.3644	-0.0086	0.0180
Personality ( <i>P_EXTRA</i> )	0.0005	0.0356	0.0146	0.9883	-0.0915	0.0926
Personality ( <i>P_AGREE</i> )	0.0697	0.0532	1.3107	0.1906	-0.0679	0.2074
Personality ( <i>P_CONSCI</i> )	0.0206	0.0494	0.4177	0.6764	-0.1071	0.1483
Personality ( <i>P_NEURO</i> )	0.0175	0.0424	0.4139	0.6792	-0.0921	0.1272
Personality ( <i>P_OPEN</i> )	0.0423	0.0405	1.0458	0.2962	-0.0624	0.1471
Industry FE				Yes		
R-sq = 0.1543						

*Panel B: Conditional indirect effects of EPM scope on employee performance through the burnout at three levels of external CSR activities*

Indirect: *SCOPE* – *BURNOUT* – *SELFPF*

Moderator: <i>EXTCSR</i>	Coefficient	Bootstrap SE	LL 99% CI	UL 99% CI
-1 SD (1.8861)	-0.0341	0.0129	-0.0756	-0.0080
Mean (2.8747)	-0.0219	0.0085	-0.0497	-0.0048
+1 SD (3.8634)	-0.0098	0.0078	-0.0348	0.0095
Index of moderated mediation:	Index	Bootstrap SE	LL 99% CI	UL 99% CI
<i>EXTCSR</i>	0.0123	0.0064	-0.0011	0.0318

Note: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5000. *SCOPE*: the scope of EPM; *SELFPF* refers to employee performance. *EXTCSR* is measured as the level of external CSR activities as a continuous variable using the summated mean values of the respective items. This study includes the following control variables: *Gender* refers to the gender of employees. *Age* refers to the age of employees. *Job level* is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. *Tenure* refers to the work experience of an employee. *Highest degree* captures the highest education level of an employee. *Remote Month* refers to the cumulative number of months that employees work remotely in the last 24 months. Personality is measured in five dimensions, including extraversion, agreeableness, conscientiousness, neuroticism, and openness.

## Measuring EPM ST using EPM target

**Table 4.21: Results of simple mediation effect (Independent variable: *TARGET*; Mediator: *BURNOUT*)**

Panel A: Direct effect (linear)						
	Direct effect	SE	<i>t</i> -value	<i>p</i> -value		
H1: <i>TARGET</i> – <i>SELFPF</i>	-0.0008	0.0212	-0.0386	0.9692		
H2: <i>TARGET</i> – <i>BURNOUT</i>	0.0704	0.0242	2.9085	0.0038		
H3: <i>BURNOUT</i> – <i>SELFPF</i>	-0.2027	0.0398	-5.0916	0.0000		
Panel B: Direct and indirect effect (PROCESS)						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Total effect	-0.0008	0.0212	-0.0386	0.9692	-0.0556	0.0539
Direct effect: <i>TARGET</i> – <i>SELFPF</i>	0.0134	0.0208	0.6464	0.5183	-0.0404	0.0673
H4: Indirect effect: <i>TARGET</i> – <i>BURNOUT</i> – <i>SELFPF</i>	-0.0143	0.0058			-0.0315	-0.0016
Panel C: Sobel test of indirect effect						
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value		
H4: <i>TARGET</i> – <i>BURNOUT</i> – <i>SELFPF</i>	-0.0143	0.0056	-2.5260	0.0115		
Panel D: Bootstrapping approach of indirect effect						
	Indirect effect	SE	<i>Z</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
H4: <i>TARGET</i> – <i>BURNOUT</i> – <i>SELFPF</i>	-0.0118	0.0073	-1.8356	0.0664	-0.0341	0.0049

Notes: LL: lower-level CI: confidence interval; UL: upper-level; SE: standard error; *TARGET*: the target of EPM; *SELFPF* refers to employee performance; *BURNOUT*: the average score burnout combining exhaustion (*BURN\_EX*), cynicism (*BURN\_CY*), and professional efficacy (*BURN\_PE*). Bootstrap sample size = 5000.

**Table 4.22: Results for moderating effect of external CSR activities on the direct link between EPM target and employee performance (Independent variable: *TARGET*)**

<i>Panel A: Regression results</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>SELFPF regressed on:</i>						
Constant	3.4521	0.5020	6.8767	0.0000	2.1536	4.7507
<i>TARGET</i>	-0.1181	0.0640	-1.8456	0.0656	-0.2836	0.0474
<i>EXTCSR</i>	-0.0305	0.0961	-0.3175	0.7510	-0.2791	0.2181
<i>TARGET</i> × <i>EXTCSR</i>	0.0389	0.0202	1.9221	0.0552	-0.0134	0.0913
<i>Gender</i>	0.0218	0.0799	0.2734	0.7847	-0.1847	0.2284
<i>Age</i>	-0.0015	0.0039	-0.3761	0.7070	-0.0116	0.0086
<i>Highest degree</i>	0.0243	0.0551	0.4406	0.6597	-0.1182	0.1667
<i>Job level</i>	0.2043	0.0858	2.3804	0.0177	-0.0177	0.4262
<i>Tenure</i>	-0.0031	0.0078	-0.4021	0.6878	-0.0234	0.0171
<i>Remote month</i>	0.0050	0.0052	0.9600	0.3376	-0.0085	0.0186
Personality ( <i>P_EXTRA</i> )	0.0115	0.0362	0.3164	0.7519	-0.0822	0.1052
Personality ( <i>P_AGREE</i> )	0.0896	0.0541	1.6553	0.0986	-0.0504	0.2296
Personality ( <i>P_CONSCI</i> )	0.0481	0.0502	0.9592	0.3380	-0.0817	0.1780
Personality ( <i>P_NEURO</i> )	-0.0259	0.0418	-0.6200	0.5356	-0.1339	0.0821
Personality ( <i>P_OPEN</i> )	0.0354	0.0412	0.8603	0.3901	-0.0711	0.1420
Industry FE				YES		
R-sq = 0.1186						
<i>Panel B: Conditional direct effects of EPM target on employee performance at three levels of external CSR activities</i>						
Direct effect: <i>TARGET</i> – <i>SELFPF</i>						
Moderator: <i>EXTCSR</i>	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
-1 SD (1.8861)	-0.0447	0.0305	-1.4642	0.1438	-0.1237	0.0343
Mean (2.8747)	-0.0063	0.0210	-0.2985	0.7654	-0.0605	0.0480
+1 SD (3.8634)	0.0322	0.0273	1.1777	0.2395	-0.0385	0.1029
<i>Note:</i> LL: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample <i>TARGET</i> : the target of EPM; <i>SELFPF</i> refers to employee performance. <i>EXTCSR</i> is measured as the level of external CSR activities as a continuous variable using the summated mean values of the respective items. This study includes the following control variables: <i>Gender</i> refers to the gender of employees. <i>Age</i> refers to the age of employees. <i>Job level</i> is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. <i>Tenure</i> refers to the work experience of an employee. <i>Highest degree</i> captures the highest education level of an employee. <i>Remote Month</i> refers to the cumulative number of months that employees work remotely in the last 24 months. Personality is measured in five dimensions, including extraversion, agreeableness, conscientiousness, neuroticism, and openness.						

**Table 4.23: Results for moderating effect of external CSR activities on the direct link between EPM target and employee burnout (Independent variable: *TARGET*)**

*Panel A: Regression results*

	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>BURNOUT</i> regressed on:						
Constant	3.9765	0.5572	7.1361	0.0000	2.5351	5.4179
<i>TARGET</i>	0.1248	0.0710	1.7569	0.0796	-0.0589	0.3085
<i>EXTCSR</i>	-0.2105	0.1067	-1.9729	0.0491	-0.4865	0.0655
<i>TARGET</i> × <i>EXTCSR</i>	-0.0175	0.0225	-0.7799	0.4358	-0.0756	0.0406
<i>Gender</i>	0.0585	0.0886	0.6603	0.5094	-0.1708	0.2878
<i>Age</i>	-0.0121	0.0043	-2.8047	0.0053	-0.0234	-0.0009
<i>Highest degree</i>	0.0842	0.0611	1.3771	0.1692	-0.0739	0.2423
<i>Job level</i>	0.0090	0.0952	0.0945	0.9248	-0.2374	0.2554
<i>Tenure</i>	0.0017	0.0087	0.1902	0.8492	-0.0208	0.0241
Remote month	-0.0016	0.0058	-0.2834	0.7770	-0.0167	0.0134
Personality ( <i>P_EXTRA</i> )	-0.0563	0.0402	-1.4009	0.1619	-0.1603	0.0477
Personality ( <i>P_AGREE</i> )	-0.1339	0.0601	-2.2286	0.0263	-0.2893	0.0215
Personality ( <i>P_CONSCI</i> )	-0.1640	0.0557	-2.9434	0.0034	-0.3081	-0.0199
Personality ( <i>P_NEURO</i> )	0.2703	0.0464	5.8297	0.0000	0.1503	0.3902
Personality ( <i>P_OPEN</i> )	0.0555	0.0457	1.2134	0.2256	-0.0628	0.1737
Industry FE				Yes		
R-sq = 0.3537						

*Panel B: Conditional direct effects of EPM target on employee burnout at three levels of external CSR activities*

Direct effect: *TARGET* – *BURNOUT*

Moderator: <i>EXTCSR</i>	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
-1 SD (1.8861)	0.0917	0.0339	2.7060	0.0071	0.0040	0.1794
Mean (2.8747)	0.0744	0.0233	3.1969	0.0015	0.0142	0.1346
+1 SD (3.8634)	0.0571	0.0303	1.8815	0.0605	-0.0214	0.1356

*Note:* LL: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5000. *TARGET*: the target of EPM; *BURNOUT* refers to employee burnout, which is characterised by exhaustion, cynicism and reduced professional efficacy. *EXTCSR* is measured as the level of external CSR activities as a continuous variable using the summated mean values of the respective items. This study includes the following control variables: *Gender* refers to the gender of employees. *Age* refers to the age of employees. *Job level* is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. *Tenure* refers to the work experience of an employee. *Highest degree* captures the highest education level of an employee. *Remote Month* refers to the cumulative number of months that employees work remotely in the last 24 months. Personality is measured in five dimensions, including extraversion, agreeableness, conscientiousness, neuroticism, and openness.

**Table 4.24: Results for moderated mediation effect of external CSR activities on the indirect link between EPM target and employee performance via burnout (Independent variable: *TARGET*)**

*Panel A: Regression results*

	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI
<i>SLELFPF regressed on:</i>						
Constant	4.1393	0.5200	7.9597	0.0000	2.7942	5.4845
<i>TARGET</i>	-0.0965	0.0631	-1.5302	0.1267	-0.2597	0.0666
<i>BURNOUT</i>	-0.1728	0.0414	-4.1692	0.0000	-0.2800	-0.0656
<i>EXTCSR</i>	-0.0669	0.0948	-0.7053	0.4810	-0.3122	0.1784
<i>TARGET</i> × <i>EXTCSR</i>	0.0359	0.0199	1.8029	0.0721	-0.0156	0.0873
<i>Gender</i>	0.0319	0.0785	0.4070	0.6842	-0.1711	0.2350
<i>Age</i>	-0.0036	0.0039	-0.9225	0.3568	-0.0136	0.0064
<i>Highest degree</i>	0.0388	0.0542	0.7158	0.4745	-0.1014	0.1790
<i>Job level</i>	0.2058	0.0843	2.4412	0.0150	-0.0123	0.4239
<i>Tenure</i>	-0.0029	0.0077	-0.3721	0.7100	-0.0227	0.0170
<i>Remote month</i>	0.0047	0.0051	0.9217	0.3572	-0.0086	0.0180
Personality ( <i>P_EXTRA</i> )	0.0017	0.0357	0.0484	0.9614	-0.0905	0.0940
Personality ( <i>P_AGREE</i> )	0.0665	0.0535	1.2429	0.2145	-0.0718	0.2048
Personality ( <i>P_CONSCI</i> )	0.0198	0.0498	0.3979	0.6909	-0.1090	0.1486
Personality ( <i>P_NEURO</i> )	0.0208	0.0425	0.4892	0.6249	-0.0892	0.1308
Personality ( <i>P_OPEN</i> )	0.0450	0.0405	1.1108	0.2673	-0.0598	0.1499
Industry FE				Yes		
R-sq = 0.1511						

*Panel B: Conditional indirect effects of EPM target on employee performance through the burnout at three levels of external CSR activities*

Indirect: <i>TARGET</i> – <i>BURNOUT</i> – <i>SELFPF</i>				
Moderator: <i>EXTCSR</i>	Coefficient	Bootstrap SE	LL 99% CI	UL 99% CI
-1 SD (1.8861)	-0.0159	0.0082	-0.0438	0.0004
Mean (2.8747)	-0.0129	0.0056	-0.0302	-0.0014
+1 SD (3.8634)	-0.0099	0.0057	-0.0274	0.0029
Index of moderated mediation:				
	Index	Bootstrap SE	LL 99% CI	UL 99% CI
<i>EXTCSR</i>	0.0030	0.0044	-0.0074	0.0175

Note: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5000. *TARGET*: the target of EPM; *SELFPF* refers to employee performance. *EXTCSR* is measured as the level of external CSR activities as a continuous variable using the summated mean values of the respective items. This study includes the following control variables: *Gender* refers to the gender of employees. *Age* refers to the age of employees. *Job level* is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. *Tenure* refers to the work experience of an employee. *Highest degree* captures the highest education level of an employee. *Remote Month* refers to the cumulative number of months that employees work remotely in the last 24 months. Personality is measured in five dimensions, including extraversion, agreeableness, conscientiousness, neuroticism, and openness.

## Measuring External CSR activities using a dummy variable

**Table 4.25: Results for moderating effect of external CSR activities on the direct link between EPM ST and employee performance (Moderator: *EXTCSR\_D*)**

<i>Panel A: Regression results</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>SELFPF regressed on:</i>						
Constant	3.3796	0.4507	7.4986	0.0000	2.2138	4.5454
<i>EPM_ST</i>	-0.0561	0.0387	-1.4506	0.1476	-0.1562	0.0439
<i>EXTCSR_D</i>	-0.2371	0.2285	-1.0375	0.3001	-0.8282	0.3540
<i>EPM_ST</i> × <i>EXTCSR_D</i>	0.1012	0.0506	1.9978	0.0463	-0.0298	0.2321
<i>Gender</i>	0.0267	0.0804	0.3326	0.7396	-0.1813	0.2348
<i>Age</i>	-0.0017	0.0039	-0.4250	0.6710	-0.0118	0.0085
<i>Highest degree</i>	0.0257	0.0554	0.4630	0.6436	-0.1177	0.1690
<i>Job level</i>	0.2168	0.0862	2.5150	0.0122	-0.0062	0.4399
<i>Tenure</i>	-0.0023	0.0078	-0.2916	0.7708	-0.0224	0.0179
<i>Remote month</i>	0.0041	0.0053	0.7844	0.4332	-0.0095	0.0178
Personality ( <i>P_EXTRA</i> )	0.0128	0.0364	0.3518	0.7252	-0.0813	0.1069
Personality ( <i>P_AGREE</i> )	0.0978	0.0543	1.7997	0.0726	-0.0428	0.2383
Personality ( <i>P_CONSCI</i> )	0.0662	0.0504	1.3142	0.1894	-0.0641	0.1964
Personality ( <i>P_NEURO</i> )	-0.0288	0.0420	-0.6871	0.4924	-0.1374	0.0797
Personality ( <i>P_OPEN</i> )	0.0335	0.0415	0.8080	0.4195	-0.0738	0.1408
Industry FE				Yes		
R-sq = 0.1075						
<i>Panel B: Conditional direct effects of EPM ST on employee performance at two levels of external CSR activities</i>						
Direct effect: <i>EPM_ST</i> – <i>SELFPF</i>						
Moderator: <i>EXTCSR_D</i>	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Low SD (0.0000)	-0.0561	0.0387	-1.4506	0.1476	-0.1562	0.0439
High SD (1.0000)	0.0450	0.0335	1.3453	0.1792	-0.0416	0.1316
<p><i>Note:</i> LL: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample <i>EPM_ST</i> refers to the invasiveness of EPM; <i>SELFPF</i> refers to employee performance. <i>BURNOUT</i> refers to employee’s burnout at work and is measured as the average score burnout combining exhaustion, cynicism, and professional efficacy. <i>EXTCSR_D</i> is measured as the level of external CSR activities as a dummy variable using the mean as the cut-off. This study includes the following control variables: <i>Gender</i> refers to the gender of employees. <i>Age</i> refers to the age of respondents, measured as the numeric value in years. <i>Job level</i> is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. <i>Tenure</i> refers to the work experience of an employee. <i>Highest degree</i> captures the highest education level of an employee. <i>Remote Month</i> refers to the cumulative number of months that employees work remotely in the last 24 months. Personality is measured in five dimensions, including extraversion, agreeableness, conscientiousness, neuroticism, and openness.</p>						

**Table 4.26: Results for moderating effect of external CSR activities on the direct link between EPM ST and employee burnout (Moderator: *EXTCSR\_D*)**

<i>Panel A: Regression results</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>BURNOUT regressed on:</i>						
Constant	3.5967	0.5055	7.1146	0.0000	2.2890	4.9044
<i>EPM_ST</i>	0.1221	0.0434	2.8148	0.0051	0.0099	0.2344
<i>EXTCSR_D</i>	-0.2474	0.2563	-0.9650	0.3351	-0.9104	0.4157
<i>EPM_ST</i> × <i>EXTCSR_D</i>	-0.0437	0.0568	-0.7695	0.4420	-0.1906	0.1032
<i>Gender</i>	0.0358	0.0902	0.3963	0.6921	-0.1976	0.2691
<i>Age</i>	-0.0117	0.0044	-2.6649	0.0080	-0.0231	-0.0003
<i>Highest degree</i>	0.0868	0.0622	1.3962	0.1633	-0.0740	0.2476
<i>Job level</i>	-0.0152	0.0967	-0.1575	0.8749	-0.2654	0.2349
<i>Tenure</i>	-0.0016	0.0087	-0.1800	0.8573	-0.0242	0.0211
Remote month	-0.0001	0.0059	-0.0095	0.9924	-0.0154	0.0153
Personality ( <i>P_EXTRA</i> )	-0.0657	0.0408	-1.6097	0.1082	-0.1712	0.0399
Personality ( <i>P_AGREE</i> )	-0.1499	0.0609	-2.4590	0.0143	-0.3075	0.0078
Personality ( <i>P_CONSCI</i> )	-0.1982	0.0565	-3.5092	0.0005	-0.3443	-0.0521
Personality ( <i>P_NEURO</i> )	0.2708	0.0471	5.7515	0.0000	0.1490	0.3926
Personality ( <i>P_OPEN</i> )	0.0619	0.0465	1.3310	0.1839	-0.0584	0.1822
Industry FE				Yes		
R-sq = 0.3318						
<i>Panel B: Conditional direct effects of EPM ST on employee burnout at two levels of external CSR activities</i>						
Direct effect: <i>EPM_ST</i> – <i>BURNOUT</i>						
Moderator: <i>EXTCSR_D</i>	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
Low SD (0.0000)	0.1221	0.0434	2.8148	0.0051	0.0099	0.2344
High SD (1.0000)	0.0784	0.0376	2.0886	0.0373	-0.0187	0.1756
<p><i>Note:</i> LL: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5000. <i>EPM_ST</i> refers to the invasiveness of EPM; <i>BURNOUT</i> refers to employee burnout, which is characterised by exhaustion, cynicism and reduced professional efficacy. <i>EXTCSR_D</i> is measured as the level of external CSR activities as a dummy variable using the mean as the cut-off. This study includes the following control variables: <i>Gender</i> refers to the gender of employees. <i>Age</i> refers to the age of respondents, measured as the numeric value in years. <i>Job level</i> is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. <i>Tenure</i> refers to the work experience of an employee. <i>Highest degree</i> captures the highest education level of an employee. <i>Remote Month</i> refers to the cumulative number of months that employees work remotely in the last 24 months. Personality is measured in five dimensions, including extraversion, agreeableness, conscientiousness, neuroticism, and openness.</p>						

**Table 4.27: Results for moderated mediation effect of external CSR activities on the indirect link between EPM ST and employee performance via burnout (Moderator: *EXTCSR\_D*)**

<i>Panel A: Regression results</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>SLELFPF regressed on:</i>						
Constant	4.0554	0.4649	8.7232	0.0000	2.8529	5.2579
<i>EPM_ST</i>	-0.0332	0.0382	-0.8686	0.3855	-0.1319	0.0656
<i>BURNOUT</i>	-0.1879	0.0409	-4.5988	0.0000	-0.2936	-0.0822
<i>EXTCSR_D</i>	-0.2835	0.2239	-1.2667	0.2059	-0.8626	0.2955
<i>EPM_ST</i> × <i>EXTCSR_D</i>	0.0929	0.0496	1.8745	0.0615	-0.0353	0.2212
<i>Gender</i>	0.0335	0.0787	0.4251	0.6709	-0.1702	0.2371
<i>Age</i>	-0.0039	0.0039	-1.0004	0.3176	-0.0139	0.0061
<i>Highest degree</i>	0.0420	0.0543	0.7722	0.4404	-0.0986	0.1825
<i>Job level</i>	0.2140	0.0844	2.5359	0.0115	-0.0043	0.4323
<i>Tenure</i>	-0.0026	0.0076	-0.3367	0.7365	-0.0223	0.0172
<i>Remote month</i>	0.0041	0.0052	0.7995	0.4244	-0.0092	0.0175
Personality ( <i>P_EXTRA</i> )	0.0005	0.0357	0.0128	0.9898	-0.0919	0.0928
Personality ( <i>P_AGREE</i> )	0.0696	0.0535	1.3008	0.1940	-0.0688	0.2081
Personality ( <i>P_CONSCI</i> )	0.0289	0.0499	0.5794	0.5626	-0.1002	0.1581
Personality ( <i>P_NEURO</i> )	0.0220	0.0425	0.5180	0.6047	-0.0880	0.1321
Personality ( <i>P_OPEN</i> )	0.0451	0.0407	1.1101	0.2675	-0.0600	0.1503
Industry FE				Yes		
R-sq = 0.1472						
<i>Panel B: Conditional indirect effects of EPM ST on employee performance through the burnout at two levels of external CSR activities</i>						
Indirect: <i>EPM_ST</i> – <i>BURNOUT</i> – <i>SELFPF</i>						
Moderator: <i>EXTCSR_D</i>	Coefficient	Bootstrap SE	LL 99% CI	UL 99% CI		
Low SD (0.0000)	-0.0229	0.0108	-0.0574	-0.0008		
High SD (1.0000)	-0.0147	0.0077	-0.0378	0.0033		
Index of moderated mediation:	Index	Bootstrap SE	LL 99% CI	UL 99% CI		
<i>EXTCSR_D</i>	0.0082	0.0113	-0.0189	0.0417		
<p><i>Note:</i> lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5000. <i>EPM_ST</i> refers to the invasiveness of EPM; <i>SELFPF</i> refers to employee performance. <i>BURNOUT</i> refers to employee burnout. <i>EXTCSR_D</i> is measured as the level of external CSR activities as a dummy variable using the mean as the cut-off. This study includes the following control variables: <i>Gender</i> refers to the gender of employees. <i>Age</i> refers to the age of employees. <i>Job level</i> is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. <i>Tenure</i> refers to the work experience of an employee. <i>Highest degree</i> captures the highest education level of an employee. <i>Remote Month</i> refers to the cumulative number of months that employees work remotely in the last 24 months. Personality is measured in five dimensions, including extraversion, agreeableness, conscientiousness, neuroticism, and openness.</p>						

## Measuring employee burnout through three dimensions

**Table 4.28: Results for moderating effect of external CSR activities on the direct link between EPM ST and employee exhaustion**

*Panel A: Regression results*

	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>BURN_EX</i> regressed on:						
Constant	1.6497	0.8653	1.9066	0.0572	-0.5884	3.8879
<i>EPM_ST</i>	0.4277	0.1231	3.4759	0.0006	0.1094	0.7460
<i>EXTCSR</i>	0.0711	0.1780	0.3995	0.6897	-0.3894	0.5316
<i>EPM_ST</i> × <i>EXTCSR</i>	-0.0808	0.0386	-2.0907	0.0371	-0.1807	0.0192
<i>Gender</i>	-0.0109	0.1324	-0.0821	0.9346	-0.3534	0.3316
<i>Age</i>	-0.0164	0.0065	-2.5462	0.0112	-0.0331	0.0003
<i>Highest degree</i>	0.0248	0.0912	0.2723	0.7855	-0.2110	0.2607
<i>Job level</i>	0.2110	0.1419	1.4873	0.1376	-0.1560	0.5781
<i>Tenure</i>	0.0041	0.0129	0.3177	0.7509	-0.0293	0.0375
<i>Remote month</i>	0.0033	0.0087	0.3835	0.7015	-0.0191	0.0258
Personality ( <i>P_EXTRA</i> )	0.0294	0.0600	0.4898	0.6245	-0.1258	0.1846
Personality ( <i>P_AGREE</i> )	-0.0871	0.0896	-0.9723	0.3314	-0.3189	0.1446
Personality ( <i>P_CONSCI</i> )	-0.1029	0.0831	-1.2370	0.2167	-0.3179	0.1122
Personality ( <i>P_NEURO</i> )	0.4701	0.0692	6.7950	0.0000	0.2912	0.6491
Personality ( <i>P_OPEN</i> )	0.1091	0.0683	1.5978	0.1108	-0.0675	0.2857
Industry FE				Yes		
R-sq = 0.2654						

*Panel B: Conditional direct effects of EPM ST on employee exhaustion at three levels of external CSR activities*

Direct effect: *EPM\_ST* – *BURN\_EX*

Moderator: <i>EXTCSR</i>	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
-1 SD (1.8861)	0.2754	0.0600	4.5865	0.0000	0.1201	0.4307
Mean (2.8747)	0.1955	0.0424	4.6092	0.0000	0.0858	0.3052
+1 SD (3.8634)	0.1157	0.0540	2.1435	0.0326	-0.0239	0.2552

*Note:* LL: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5000. *EPM\_ST* refers to the invasiveness of EPM; *BURN\_EX* refers to employee emotional exhaustion. *EXTCSR* is measured as the level of external CSR activities as a continuous variable using the summated mean values of the respective items. This study includes the following control variables: *Gender* refers to the gender of employees. *Age* refers to the age of employees. *Job level* is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. *Tenure* refers to the work experience of an employee. *Highest degree* captures the highest education level of an employee. *Remote Month* refers to the cumulative number of months that employees work remotely in the last 24 months. Personality is measured in five dimensions, including extraversion, agreeableness, conscientiousness, neuroticism, and openness.

**Table 4.29: Results for moderating effect of external CSR activities on the direct link between EPM ST and employee cynicism**

<i>Panel A: Regression results</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>BURN_CY regressed on:</i>						
Constant	3.5768	0.8141	4.3937	0.0000	1.4711	5.6825
<i>EPM_ST</i>	0.2653	0.1158	2.2915	0.0224	-0.0342	0.5647
<i>EXTCSR</i>	-0.2089	0.1675	-1.2472	0.2130	-0.6422	0.2244
<i>EPM_ST</i> × <i>EXTCSR</i>	-0.0370	0.0363	-1.0179	0.3093	-0.1310	0.0570
<i>Gender</i>	0.0725	0.1246	0.5821	0.5608	-0.2497	0.3948
<i>Age</i>	-0.0120	0.0061	-1.9712	0.0493	-0.0277	0.0037
<i>Highest degree</i>	0.1321	0.0858	1.5394	0.1244	-0.0898	0.3540
<i>Job level</i>	-0.1185	0.1335	-0.8873	0.3754	-0.4638	0.2269
<i>Tenure</i>	0.0017	0.0122	0.1427	0.8866	-0.0297	0.0332
<i>Remote month</i>	0.0022	0.0082	0.2750	0.7835	-0.0189	0.0234
Personality ( <i>P_EXTRA</i> )	-0.1293	0.0565	-2.2901	0.0225	-0.2754	0.0167
Personality ( <i>P_AGREE</i> )	-0.1668	0.0843	-1.9781	0.0485	-0.3848	0.0513
Personality ( <i>P_CONSCI</i> )	-0.0824	0.0782	-1.0539	0.2925	-0.2848	0.1199
Personality ( <i>P_NEURO</i> )	0.2285	0.0651	3.5105	0.0005	0.0601	0.3969
Personality ( <i>P_OPEN</i> )	0.1255	0.0642	1.9547	0.0512	-0.0406	0.2917
Industry FE				Yes		
R-sq = 0.2582						
<i>Panel B: Conditional direct effects of EPM ST on employee cynicism at three levels of external CSR activities</i>						
Direct effect: <i>EPM_ST</i> – <i>BURN_CY</i>						
Moderator: <i>EXTCSR</i>	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
-1 SD (1.8861)	0.1955	0.0565	3.4610	0.0006	0.0494	0.3416
Mean (2.8747)	0.1589	0.0399	3.9823	0.0001	0.0557	0.2622
+1 SD (3.8634)	0.1223	0.0508	2.4100	0.0163	-0.0090	0.2537
<i>Note:</i> LL: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5000. <i>EPM_ST</i> refers to the invasiveness of EPM; <i>BURN_CY</i> refers to employee cynicism. <i>EXTCSR</i> is measured as the level of external CSR activities as a continuous variable using the summated mean values of the respective items. This study includes the following control variables: <i>Gender</i> refers to the gender of employees. <i>Age</i> refers to the age of employees. <i>Job level</i> is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. <i>Tenure</i> refers to the work experience of an employee. <i>Highest degree</i> captures the highest education level of an employee. <i>Remote Month</i> refers to the cumulative number of months that employees work remotely in the last 24 months. Personality is measured in five dimensions, including extraversion, agreeableness, conscientiousness, neuroticism, and openness.						

**Table 4.30: Results for moderating effect of external CSR activities on the direct link between EPM ST and employee professional efficacy**

*Panel A: Regression results*

	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI
<i>BURN_PE regressed on:</i>						
Constant	5.1697	0.5268	9.8141	0.0000	3.8071	6.5322
<i>EPM_ST</i>	0.0398	0.0749	0.5312	0.5955	-0.1540	0.2336
<i>EXTCSR</i>	-0.1851	0.1084	-1.7077	0.0884	-0.4654	0.0953
<i>EPM_ST</i> × <i>EXTCSR</i>	-0.0146	0.0235	-0.6213	0.5347	-0.0754	0.0462
<i>Gender</i>	0.0628	0.0806	0.7791	0.4363	-0.1457	0.2713
<i>Age</i>	-0.0087	0.0039	-2.2177	0.0271	-0.0189	0.0014
<i>Highest degree</i>	0.0879	0.0555	1.5833	0.1141	-0.0557	0.2315
<i>Job level</i>	-0.0703	0.0864	-0.8137	0.4162	-0.2937	0.1532
<i>Tenure</i>	-0.0020	0.0079	-0.2486	0.8038	-0.0223	0.0184
<i>Remote month</i>	-0.0071	0.0053	-1.3511	0.1773	-0.0208	0.0065
Personality ( <i>P_EXTRA</i> )	-0.0697	0.0365	-1.9064	0.0572	-0.1642	0.0249
Personality ( <i>P_AGREE</i> )	-0.1380	0.0545	-2.5307	0.0117	-0.2791	0.0030
Personality ( <i>P_CONSCI</i> )	-0.3010	0.0506	-5.9462	0.0000	-0.4319	-0.1701
Personality ( <i>P_NEURO</i> )	0.1338	0.0421	3.1760	0.0016	0.0248	0.2427
Personality ( <i>P_OPEN</i> )	-0.0408	0.0416	-0.9806	0.3273	-0.1483	0.0668
Industry FE				Yes		
R-sq = 0.3803						

*Panel B: Conditional direct effects of EPM ST on employee professional efficacy at three levels of external CSR activities*

Direct effect: *EPM\_ST* – *BURN\_CY*

Moderator: <i>EXTCSR</i>	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI
-1 SD (1.8861)	0.0122	0.0366	0.3347	0.7380	-0.0823	0.1068
Mean (2.8747)	-0.0022	0.0258	-0.0857	0.9318	-0.0690	0.0646
+1 SD (3.8634)	-0.0167	0.0328	-0.5071	0.6123	-0.1016	0.0683

*Note:* LL: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5000. *EPM\_ST* refers to the invasiveness of EPM; *BURN\_PE* refers to reduced employee professional efficacy. *EXTCSR* is measured as the level of external CSR activities as a continuous variable using the summated mean values of the respective items. This study includes the following control variables: *Gender* refers to the gender of employees. *Age* refers to the age of employees. *Job level* is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. *Tenure* refers to the work experience of an employee. *Highest degree* captures the highest education level of an employee. *Remote Month* refers to the cumulative number of months that employees work remotely in the last 24 months. Personality is measured in five dimensions, including extraversion, agreeableness, conscientiousness, neuroticism, and openness.

**Table 4.31: Results for moderated mediation effect of external CSR activities on the indirect link between EPM ST and employee performance via exhaustion**

<i>Panel A: Regression results</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>SLELFPF regressed on:</i>						
Constant	3.8025	0.5187	7.3307	0.0000	2.4607	5.1442
<i>EPM_ST</i>	-0.1383	0.0744	-1.8579	0.0638	-0.3308	0.0543
<i>BURN_EX</i>	-0.0808	0.0280	-2.8879	0.0041	-0.1531	-0.0084
<i>EXTCSR</i>	-0.1010	0.1063	-0.9500	0.3426	-0.3760	0.1740
<i>EPM_ST</i> × <i>EXTCSR</i>	0.0506	0.0232	2.1830	0.0295	-0.0094	0.1106
<i>Gender</i>	0.0251	0.0791	0.3177	0.7509	-0.1794	0.2296
<i>Age</i>	-0.0029	0.0039	-0.7411	0.4590	-0.0129	0.0072
<i>Highest degree</i>	0.0281	0.0544	0.5152	0.6067	-0.1128	0.1689
<i>Job level</i>	0.2242	0.0849	2.6397	0.0086	0.0045	0.4439
<i>Tenure</i>	-0.0028	0.0077	-0.3651	0.7152	-0.0228	0.0171
<i>Remote month</i>	0.0051	0.0052	0.9822	0.3265	-0.0083	0.0185
Personality ( <i>P_EXTRA</i> )	0.0138	0.0358	0.3845	0.7008	-0.0789	0.1065
Personality ( <i>P_AGREE</i> )	0.0816	0.0536	1.5235	0.1283	-0.0569	0.2201
Personality ( <i>P_CONSCI</i> )	0.0418	0.0497	0.8398	0.4015	-0.0869	0.1704
Personality ( <i>P_NEURO</i> )	0.0128	0.0434	0.2960	0.7673	-0.0993	0.1250
Personality ( <i>P_OPEN</i> )	0.0431	0.0409	1.0544	0.2922	-0.0626	0.1488
Industry FE				Yes		
R-sq = 0.1389						
<i>Panel B: Conditional indirect effects of EPM ST on employee performance through the employee exhaustion at three levels of external CSR activities</i>						
Indirect: <i>EPM_ST</i> – <i>BURN_EX</i> – <i>SELFPF</i>						
Moderator: <i>EXTCSR</i>	Coefficient	Bootstrap SE	LL 99% CI	UL 99% CI		
-1 SD (1.8861)	-0.0222	0.0102	-0.0542	-0.0001		
Mean (2.8747)	-0.0158	0.0072	-0.0385	-0.0001		
+1 SD (3.8634)	-0.0093	0.0061	-0.0297	0.0026		
Index of moderated mediation:	Index	Bootstrap SE	LL 99% CI	UL 99% CI		
<i>EXTCSR</i>	0.0065	0.0044	-0.0021	0.0207		

Note: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5000. *EPM\_ST* refers to the invasiveness of EPM; *BURN\_EX* refers to employee emotional exhaustion. *SELFPF* refers to employee performance. *EXTCSR* is measured as the level of external CSR activities. This study includes the following control variables: *Gender* refers to the gender of employees. *Age* refers to the age of employees. *Job level* indicates whether employees have no managerial experience. *Tenure* refers to the work experience of an employee. *Highest degree* captures the highest education level of an employee. *Remote Month* refers to the cumulative number of months that employees work remotely in the last 24 months. Personality is measured in five dimensions, including extraversion, agreeableness, conscientiousness, neuroticism, and openness.

**Table 4.32: Results for moderated mediation effect of external CSR activities on the indirect link between EPM ST and employee performance via cynicism**

<i>Panel A: Regression results</i>						
	Coefficient	SE	t-value	p-value	LL 95% CI	UL 95% CI
<i>SLELPPF regressed on:</i>						
Constant	4.1144	0.5221	7.8803	0.0000	2.7639	5.4649
<i>EPM_ST</i>	-0.1398	0.0731	-1.9116	0.0566	-0.3290	0.0494
<i>BURN_CY</i>	-0.1245	0.0294	-4.2308	0.0000	-0.2006	-0.0484
<i>EXTCSR</i>	-0.1328	0.1054	-1.2595	0.2085	-0.4054	0.1399
<i>EPM_ST</i> × <i>EXTCSR</i>	0.0525	0.0229	2.2973	0.0221	-0.0066	0.1116
<i>Gender</i>	0.0350	0.0783	0.4473	0.6549	-0.1675	0.2375
<i>Age</i>	-0.0030	0.0038	-0.7933	0.4280	-0.0129	0.0069
<i>Highest degree</i>	0.0425	0.0540	0.7862	0.4321	-0.0973	0.1822
<i>Job level</i>	0.1924	0.0839	2.2923	0.0223	-0.0247	0.4095
<i>Tenure</i>	-0.0029	0.0076	-0.3840	0.7012	-0.0227	0.0168
<i>Remote month</i>	0.0051	0.0051	0.9945	0.3205	-0.0082	0.0184
Personality ( <i>P_EXTRA</i> )	-0.0047	0.0357	-0.1314	0.8955	-0.0970	0.0876
Personality ( <i>P_AGREE</i> )	0.0679	0.0532	1.2762	0.2025	-0.0697	0.2054
Personality ( <i>P_CONSCI</i> )	0.0398	0.0492	0.8090	0.4189	-0.0875	0.1671
Personality ( <i>P_NEURO</i> )	0.0033	0.0414	0.0799	0.9363	-0.1039	0.1105
Personality ( <i>P_OPEN</i> )	0.0499	0.0405	1.2320	0.2186	-0.0549	0.1547
Industry FE				Yes		
R-sq = 0.1563						
<i>Panel B: Conditional indirect effects of EPM ST on employee performance through the employee cynicism at three levels of external CSR activities</i>						
Indirect: <i>EPM_ST</i> – <i>BURN_CY</i> – <i>SELPPF</i>						
Moderator: <i>EXTCSR</i>	Coefficient	Bootstrap SE	LL 99% CI	UL 99% CI		
-1 SD (1.8861)	-0.0243	0.0097	-0.0543	-0.0045		
Mean (2.8747)	-0.0198	0.0070	-0.0410	-0.0050		
+1 SD (3.8634)	-0.0152	0.0068	-0.0368	-0.0017		
Index of moderated mediation:	Index	Bootstrap SE	LL 99% CI	UL 99% CI		
<i>EXTCSR</i>	0.0046	0.0046	-0.0072	0.0173		

Note: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5000. *EPM\_ST* refers to the invasiveness of EPM; *BURN\_CY* refers to employee cynicism. *SELPPF* refers to employee performance. *EXTCSR* is measured as the level of external CSR activities. This study includes the following control variables: *Gender* refers to the gender of employees. *Age* refers to the age of employees. *Job level* indicates whether employees have no managerial experience. *Tenure* refers to the work experience of an employee. *Highest degree* captures the highest education level of an employee. *Remote Month* refers to the cumulative number of months that employees work remotely in the last 24 months. Personality is measured in five dimensions, including extraversion, agreeableness, conscientiousness, neuroticism, and openness.

**Table 4.33: Results for moderated mediation effect of external CSR activities on the indirect link between EPM ST and employee performance via professional efficacy**

<i>Panel A: Regression results</i>						
	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI
<i>SLELPPF regressed on:</i>						
Constant	4.2509	0.5701	7.4570	0.0000	2.7764	5.7255
<i>EPM_ST</i>	-0.1684	0.0737	-2.2849	0.0228	-0.3590	0.0222
<i>BURN_PE</i>	-0.1125	0.0460	-2.4436	0.0149	-0.2316	0.0066
<i>EXTCSR</i>	-0.1276	0.1069	-1.1933	0.2334	-0.4041	0.1490
<i>EPM_ST</i> × <i>EXTCSR</i>	0.0555	0.0231	2.3977	0.0169	-0.0044	0.1153
<i>Gender</i>	0.0331	0.0793	0.4168	0.6770	-0.1721	0.2382
<i>Age</i>	-0.0025	0.0039	-0.6512	0.5152	-0.0126	0.0075
<i>Highest degree</i>	0.0359	0.0547	0.6565	0.5118	-0.1056	0.1775
<i>Job level</i>	0.1992	0.0850	2.3439	0.0195	-0.0206	0.4191
<i>Tenure</i>	-0.0034	0.0077	-0.4354	0.6634	-0.0234	0.0166
<i>Remote month</i>	0.0040	0.0052	0.7720	0.4405	-0.0095	0.0175
Personality ( <i>P_EXTRA</i> )	0.0036	0.0361	0.0990	0.9212	-0.0897	0.0969
Personality ( <i>P_AGREE</i> )	0.0731	0.0540	1.3532	0.1766	-0.0666	0.2128
Personality ( <i>P_CONSCI</i> )	0.0162	0.0517	0.3135	0.7540	-0.1174	0.1498
Personality ( <i>P_NEURO</i> )	-0.0101	0.0419	-0.2407	0.8099	-0.1184	0.0982
Personality ( <i>P_EXTRA</i> )	0.0297	0.0409	0.7262	0.4681	-0.0761	0.1355
Industry FE				Yes		
R-sq = 0.1345						
<i>Panel B: Conditional indirect effects of EPM ST on employee performance through the employee professional efficacy at three levels of external CSR activities</i>						
Indirect: <i>EPM_ST</i> – <i>BURN_PE</i> – <i>SELPPF</i>						
Moderator: <i>EXTCSR</i>	Coefficient	Bootstrap SE	LL 99% CI	UL 99% CI		
-1 SD (1.8861)	-0.0014	0.0054	-0.0183	0.0154		
Mean (2.8747)	0.0002	0.0034	-0.0098	0.0120		
+1 SD (3.8634)	0.0019	0.0042	-0.0096	0.0162		
Index of moderated mediation:	Index	Bootstrap SE	LL 99% CI	UL 99% CI		
<i>EXTCSR</i>	0.0016	0.0034	-0.0081	0.0126		

Note: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5000. *EPM\_ST* refers to the invasiveness of EPM; *BURN\_PE* refers to reduced employee professional efficacy. *SELPPF* refers to employee performance. *EXTCSR* is measured as the level of external CSR activities. This study includes the following control variables: *Gender* refers to the gender of employees. *Age* refers to the age of employees. *Job level* indicates whether employees have no managerial experience. *Tenure* refers to the work experience of an employee. *Highest degree* captures the highest education level of an employee. *Remote Month* refers to the cumulative number of months that employees work remotely in the last 24 months. Personality is measured in five dimensions, including extraversion, agreeableness, conscientiousness, neuroticism, and openness.

## Appendix F: Additional Tests (Chapter 4)

**Table 4.34: Results for moderating effect of employee acceptance of monitoring (*ACCEPT*) on the direct link between EPM ST and employee burnout**

<i>Panel A: Regression results</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>BURNOUT regressed on:</i>						
Constant	3.1911	0.5606	5.6926	0.0000	1.7411	4.6411
<i>EPM_ST</i>	0.2864	0.0693	4.1304	0.0000	0.1070	0.4658
<i>ACCEPT</i>	0.1043	0.0886	1.1777	0.2395	-0.1248	0.3334
<i>EPM_ST</i> × <i>ACCEPT</i>	-0.0592	0.0185	-3.1943	0.0015	-0.1071	-0.0113
<i>Gender</i>	0.0438	0.0888	0.4934	0.6220	-0.1860	0.2736
<i>Age</i>	-0.0099	0.0043	-2.2861	0.0227	-0.0211	0.0013
<i>Highest degree</i>	0.0649	0.0614	1.0572	0.2910	-0.0938	0.2236
<i>Job level</i>	-0.0520	0.0947	-0.5484	0.5837	-0.2970	0.1931
<i>Tenure</i>	-0.0053	0.0086	-0.6135	0.5398	-0.0275	0.0170
Remote month	0.0013	0.0058	0.2290	0.8190	-0.0137	0.0164
Personality ( <i>P_EXTRA</i> )	-0.0550	0.0404	-1.3596	0.1746	-0.1596	0.0496
Personality ( <i>P_AGREE</i> )	-0.1380	0.0601	-2.2959	0.0221	-0.2935	0.0175
Personality ( <i>P_CONSCI</i> )	-0.1907	0.0561	-3.3985	0.0007	-0.3358	-0.0455
Personality ( <i>P_NEURO</i> )	0.2642	0.0465	5.6800	0.0000	0.1439	0.3844
Personality ( <i>P_OPEN</i> )	0.0385	0.0460	0.8364	0.4034	-0.0805	0.1574
Industry FE				Yes		
R-sq = 0.3495						

*Panel B: Conditional direct effects of EPM ST on employee burnout at three levels of ACCEPT*

Direct effect: <i>EPM_ST</i> – <i>BURNOUT</i>						
Moderator: <i>ACCEPT</i>	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
-1 SD (2.0778)	0.1635	0.0377	4.3404	0.0000	0.0660	0.2609
Mean (3.4618)	0.0816	0.0284	2.8757	0.0042	0.0082	0.1549
+1 SD (4.8458)	-0.0003	0.0388	-0.0088	0.9930	-0.1007	0.1000

*Note:* LL: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5000. *EPM\_ST* refers to the invasiveness of EPM; *BURNOUT* refers to employee's burnout at work. *ACCEPT* assesses employees' acceptance of monitoring; This study includes the following control variables: *Gender* refers to the gender of employees. *Age* refers to the age of respondents, measured as the numeric value in years. *Job level* is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. *Tenure* refers to the work experience of an employee. *Highest degree* captures the highest education level of an employee. *Remote Month* refers to the cumulative number of months that employees work remotely in the last 24 months. Personality is measured in five dimensions, including extraversion, agreeableness, conscientiousness, neuroticism, and openness.

**Table 4.35: Results for moderating effect of employee perceived invasion of privacy (*PRIVACY*) on the direct link between *EPM ST* and employee burnout**

<i>Panel A: Regression results</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>BURNOUT regressed on:</i>						
Constant	3.7823	0.5715	6.6184	0.0000	2.3040	5.2605
<i>EPM_ST</i>	-0.1656	0.0783	-2.1132	0.0351	-0.3682	0.0371
<i>PRIVACY</i>	0.0423	0.1150	0.3681	0.7130	-0.2552	0.3399
<i>EPM_ST</i> × <i>PRIVACY</i>	0.0576	0.0244	2.3617	0.0186	-0.0055	0.1208
<i>Gender</i>	0.0545	0.0871	0.6252	0.5321	-0.1709	0.2799
<i>Age</i>	-0.0101	0.0042	-2.3689	0.0183	-0.0210	0.0009
<i>Highest degree</i>	0.0407	0.0604	0.6747	0.5002	-0.1154	0.1969
<i>Job level</i>	-0.0723	0.0930	-0.7771	0.4375	-0.3128	0.1683
<i>Tenure</i>	-0.0073	0.0084	-0.8631	0.3885	-0.0291	0.0146
Remote month	-0.0003	0.0057	-0.0465	0.9629	-0.0151	0.0146
Personality ( <i>P_EXTRA</i> )	-0.0542	0.0397	-1.3661	0.1726	-0.1568	0.0484
Personality ( <i>P_AGREE</i> )	-0.1322	0.0590	-2.2393	0.0256	-0.2849	0.0205
Personality ( <i>P_CONSCI</i> )	-0.1866	0.0544	-3.4282	0.0007	-0.3273	-0.0458
Personality ( <i>P_NEURO</i> )	0.2730	0.0456	5.9830	0.0000	0.1550	0.3911
Personality ( <i>P_OPEN</i> )	0.0417	0.0451	0.9250	0.3555	-0.0750	0.1584
Industry FE				Yes		
R-sq = 0.3727						
<i>Panel B: Conditional direct effects of EPM ST on employee burnout at three levels of PRIVACY</i>						
Direct effect: <i>EPM_ST</i> – <i>BURNOUT</i>						
Moderator: <i>PRIVACY</i>	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
-1 SD (1.7253)	-0.0661	0.0428	-1.5462	0.1228	-0.1768	0.0445
Mean (2.7842)	-0.0051	0.0307	-0.1666	0.8677	-0.0844	0.0742
+1 SD (3.8431)	0.0559	0.0372	1.5015	0.1339	-0.0404	0.1522
<i>Note:</i> LL: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5000. <i>EPM_ST</i> refers to the invasiveness of EPM; <i>BURNOUT</i> refers to employee’s burnout at work. <i>PRIVACY</i> refers to employee perceived invasion of privacy in relation to EPM. This study includes the following control variables: <i>Gender</i> refers to the gender of employees. <i>Age</i> refers to the age of respondents, measured as the numeric value in years. <i>Job level</i> is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. <i>Tenure</i> refers to the work experience of an employee. <i>Highest degree</i> captures the highest education level of an employee. <i>Remote Month</i> refers to the cumulative number of months that employees work remotely in the last 24 months. Personality is measured in five dimensions, including extraversion, agreeableness, conscientiousness, neuroticism, and openness.						

**Table 4.36: Results for moderating effect of employee identification on the direct link between EPM ST and employee performance**

<i>Panel A: Regression results</i>						
	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI
<i>SELFPF regressed on:</i>						
Constant	3.8532	0.4911	7.8461	0.0000	2.5829	5.1235
<i>EPM_ST</i>	-0.1874	0.0608	-3.0811	0.0022	-0.3448	-0.0301
<i>IDENTIFI</i>	-0.0830	0.0636	-1.3056	0.1923	-0.2474	0.0814
<i>EPM_ST</i> × <i>IDENTIFI</i>	0.0457	0.0130	3.5177	0.0005	0.0121	0.0794
<i>Gender</i>	0.0119	0.0779	0.1531	0.8784	-0.1895	0.2133
<i>Age</i>	-0.0026	0.0038	-0.6877	0.4920	-0.0124	0.0072
<i>Highest degree</i>	0.0232	0.0539	0.4305	0.6670	-0.1162	0.1625
<i>Job level</i>	0.1866	0.0839	2.2242	0.0266	-0.0304	0.4035
<i>Tenure</i>	-0.0040	0.0076	-0.5320	0.5950	-0.0237	0.0156
<i>Remote month</i>	0.0043	0.0051	0.8375	0.4027	-0.0089	0.0175
Personality ( <i>P_EXTRA</i> )	-0.0021	0.0356	-0.0588	0.9531	-0.0942	0.0900
Personality ( <i>P_AGREE</i> )	0.0693	0.0532	1.3007	0.1940	-0.0685	0.2070
Personality ( <i>P_CONSCI</i> )	0.0411	0.0491	0.8386	0.4022	-0.0858	0.1680
Personality ( <i>P_NEURO</i> )	-0.0209	0.0408	-0.5123	0.6087	-0.1266	0.0847
Personality ( <i>P_OPEN</i> )	0.0454	0.0404	1.1253	0.2611	-0.0590	0.1498
Industry FE				Yes		
R-sq = 0.1582						

*Panel B: Conditional direct effects of EPM ST on employee performance at three levels of employee identification*

Direct effect: <i>EPM_ST</i> – <i>SELFPF</i>						
Moderator: <i>IDENTIFI</i>	Coefficient	SE	t-value	p-value	LL 99% CI	UL 99% CI
-1 SD (2.4806)	-0.0739	0.0340	-2.1725	0.0303	-0.1620	0.0141
Mean (4.0729)	-0.0011	0.0250	-0.0447	0.9644	-0.0657	0.0635
+1 SD (5.6652)	0.0717	0.0308	2.3311	0.0202	-0.0079	0.1513

*Note:* LL: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5,000. *EPM\_ST* refers to the invasiveness of EPM; *SELFPF* refers to employee performance. *BURNOUT* refers to employee burnout at work. *IDENTIFI* refers to employee identification. This study includes the following control variables: *Gender* refers to the gender of employees. *Age* refers to the age of respondents, measured as the numeric value in years. *Job level* is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. *Tenure* refers to the work experience of an employee. *Highest degree* captures the highest education level of an employee. *Remote Month* refers to the cumulative number of months that employees worked remotely in the preceding 24 months. Personality is measured in five dimensions: extraversion, agreeableness, conscientiousness, neuroticism and openness.

**Table 4.37: Results for moderating effect of employee identification on the direct link between EPM ST and employee burnout**

<i>Panel A: Regression results</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>BURNOUT regressed on:</i>						
Constant	3.5892	0.5178	6.9311	0.0000	2.2498	4.9287
<i>EPM_ST</i>	0.1921	0.0641	2.9953	0.0029	0.0262	0.3580
<i>IDENTIFI</i>	-0.1638	0.0670	-2.4440	0.0149	-0.3372	0.0096
<i>EPM_ST</i> × <i>IDENTIFI</i>	-0.0254	0.0137	-1.8545	0.0643	-0.0609	0.0100
<i>Gender</i>	0.0543	0.0821	0.6609	0.5090	-0.1581	0.2666
<i>Age</i>	-0.0108	0.0040	-2.7057	0.0071	-0.0212	-0.0005
<i>Highest degree</i>	0.0667	0.0568	1.1735	0.2412	-0.0803	0.2136
<i>Job level</i>	0.0626	0.0884	0.7074	0.4797	-0.1662	0.2913
<i>Tenure</i>	0.0038	0.0080	0.4696	0.6388	-0.0170	0.0245
Remote month	0.0000	0.0054	-0.0077	0.9938	-0.0140	0.0139
Personality ( <i>P_EXTRA</i> )	-0.0239	0.0375	-0.6375	0.5241	-0.1210	0.0732
Personality ( <i>P_AGREE</i> )	-0.0717	0.0561	-1.2774	0.2021	-0.2170	0.0735
Personality ( <i>P_CONSCI</i> )	-0.1430	0.0517	-2.7642	0.0059	-0.2768	-0.0092
Personality ( <i>P_NEURO</i> )	0.2679	0.0431	6.2208	0.0000	0.1565	0.3793
Personality ( <i>P_OPEN</i> )	0.0266	0.0426	0.6254	0.5320	-0.0835	0.1367
Industry FE				Yes		
R-sq = 0.4430						
<i>Panel B: Conditional direct effects of EPM ST on employee burnout at three levels of employee identification</i>						
Direct effect: <i>EPM_ST</i> – <i>BURNOUT</i>						
Moderator: <i>IDENTIFI</i>	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
-1 SD (2.4806)	0.1290	0.0359	3.5952	0.0004	0.0362	0.2219
Mean (4.0729)	0.0886	0.0263	3.3622	0.0008	0.0204	0.1567
+1 SD (5.6652)	0.0481	0.0324	1.4816	0.1391	-0.0358	0.1320
<p><i>Note:</i> LL: lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5,000. <i>EPM_ST</i> refers to the invasiveness of EPM; <i>BURNOUT</i> refers to employee burnout. <i>IDENTIFI</i> refers to employee identification. This study includes the following control variables: <i>Gender</i> refers to the gender of employees. <i>Age</i> refers to the age of respondents, measured as the numeric value in years. <i>Job level</i> is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. <i>Tenure</i> refers to the work experience of an employee. <i>Highest degree</i> captures the highest education level of an employee. <i>Remote Month</i> refers to the cumulative number of months that employees worked remotely in the preceding 24 months. Personality is measured in five dimensions: extraversion, agreeableness, conscientiousness, neuroticism and openness.</p>						

**Table 4.38: Results for moderated mediation effect of employee identification on the indirect link between EPM ST and employee performance via burnout**

<i>Panel A: Regression results</i>						
	Coefficient	SE	<i>t</i> -value	<i>p</i> -value	LL 99% CI	UL 99% CI
<i>SLELFPF regressed on:</i>						
Constant	4.3184	0.5120	8.4338	0.0000	2.9940	5.6429
<i>EPM_ST</i>	-0.1625	0.0609	-2.6680	0.0079	-0.3201	-0.0050
<i>BURNOUT</i>	-0.1296	0.0440	-2.9430	0.0034	-0.2435	-0.0157
<i>IDENTIFI</i>	-0.1042	0.0635	-1.6426	0.1011	-0.2684	0.0599
<i>EPM_ST</i> × <i>IDENTIFI</i>	0.0424	0.0129	3.2792	0.0011	0.0090	0.0759
<i>Gender</i>	0.0190	0.0773	0.2454	0.8063	-0.1809	0.2188
<i>Age</i>	-0.0040	0.0038	-1.0579	0.2907	-0.0138	0.0058
<i>Highest degree</i>	0.0318	0.0535	0.5949	0.5522	-0.1066	0.1702
<i>Job level</i>	0.1947	0.0832	2.3390	0.0198	-0.0206	0.4100
<i>Tenure</i>	-0.0036	0.0075	-0.4716	0.6374	-0.0231	0.0159
<i>Remote month</i>	0.0043	0.0051	0.8435	0.3994	-0.0088	0.0174
Personality ( <i>P_EXTRA</i> )	-0.0052	0.0353	-0.1471	0.8831	-0.0966	0.0862
Personality ( <i>P_AGREE</i> )	0.0600	0.0529	1.1335	0.2576	-0.0769	0.1968
Personality ( <i>P_CONSCI</i> )	0.0226	0.0491	0.4608	0.6452	-0.1043	0.1495
Personality ( <i>P_NEURO</i> )	0.0138	0.0422	0.3272	0.7437	-0.0953	0.1229
Personality ( <i>P_OPEN</i> )	0.0489	0.0400	1.2203	0.2230	-0.0547	0.1525
Industry FE				Yes		
R-sq = 0.1541						
<i>Panel B: Conditional indirect effects of EPM ST on employee performance through burnout at three levels of employee identification</i>						
Indirect: <i>EPM_ST</i> – <i>BURNOUT</i> – <i>SELFPF</i>						
Moderator: <i>IDENTIFI</i>	Coefficient	Bootstrap SE	LL 99% CI	UL 99% CI		
-1 SD (2.4806)	-0.0167	0.0080	-0.0432	-0.0015		
Mean (4.0729)	-0.0115	0.0055	-0.0286	-0.0010		
+1 SD (5.6652)	-0.0062	0.0050	-0.0228	0.0063		
Index of moderated mediation:	Index	Bootstrap SE	LL 99% CI	UL 99% CI		
<i>IDENTIFI</i>	0.0033	0.0024	-0.0016	0.0117		
<p><i>Note:</i> lower-level CI: confidence interval; UL: upper level; SE: standard error; SD: standard deviation. Bootstrap sample size = 5,000. <i>EPM_ST</i> refers to the invasiveness of EPM; <i>SELFPF</i> refers to employee performance. <i>BURNOUT</i> refers to employee burnout. <i>IDENTIFI</i> refers to employee identification. This study includes the following control variables: <i>Gender</i> refers to the gender of employees. <i>Age</i> refers to the age of employees. <i>Job level</i> is an indicator variable that is set at 1 if an employee has managerial experience and 0 if an employee has no managerial experience. <i>Tenure</i> refers to the work experience of an employee. <i>Highest degree</i> captures the highest education level of an employee. <i>Remote Month</i> refers to the cumulative number of months that employees worked remotely in the preceding 24 months. Personality is measured in five dimensions: extraversion, agreeableness, conscientiousness, neuroticism and openness.</p>						