Digitalisation of Work Processes and Fear of Job Loss: Does Digital Risk Governance Play a Role?

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Abstract: The rapid digitalisation of workplaces is transforming how work is organised, coordinated, and controlled. Technologies such as AI-supported systems, automated task allocation, monitoring tools, wearable devices, and mobile digital infrastructures are increasingly embedded in organisational processes across sectors. While these developments may improve efficiency and flexibility, growing evidence suggests that they also generate psychosocial risks, including increased surveillance, work intensification, reduced autonomy, and fear of job loss. Existing research further indicates that these effects depend not only on the technologies themselves, but also on organisational practices surrounding their implementation. This paper examines the relationship between digitalisation of work processes and fear of job loss in European workplaces, with particular attention to the role of digital risk governance. Building on the literature on algorithmic management, psychosocial risks, and digital transformation, the study conceptualises workplace digitalisation as a multidimensional phenomenon encompassing both basic digital infrastructures and more advanced forms of algorithmic and AI-driven management. The literature review highlights that technologies associated with monitoring, coordination, and automation of work processes are most strongly linked to employment insecurity and psychosocial strain, while organisational mechanisms such as employee consultation, training, and digital risk assessment may mitigate these effects. The analysis draws on data from the Fourth European Survey of Enterprises on New and Emerging Risks (ESENER 2024), conducted by EU-OSHA, covering 41,458 establishments across EU Member States. Methodologically, the study combines latent class analysis (LCA) with weighted logistic regression models. LCA is used to identify distinct profiles of workplace digitalisation based on the adoption of technologies such as mobile devices, collaborative robots, automated task allocation systems, monitoring systems, AI-based systems, and wearable technologies. Regression models then examine the relationship between digitalisation profiles and fear of job loss, controlling for establishment size, sector, and country effects. Preliminary results indicate that highly digitalised and monitoring-intensive workplaces report significantly higher levels of fear of job loss than low-digitalisation workplaces. Technologies associated with monitoring and algorithmic coordination appear particularly relevant. In contrast, the digital risk governance practice index shows neither a significant direct association with fear of job loss nor a significant moderating effect.

Keywords: Workplace digitalisation, Fear of job loss, Digital risk governance, Psychosocial risks, Algorithmic management

1. Introduction

The rapid digitalisation of workplaces is transforming how work is organised, coordinated, monitored, and controlled across contemporary economies. Organisations increasingly adopt digital technologies such as AI-supported systems, automated task allocation tools, monitoring technologies, wearable devices, robotics, and algorithmic management systems. While these developments are frequently associated with efficiency gains and organisational flexibility, they also raise concerns regarding psychosocial risks, job quality, and employment security.

The growing integration of digital technologies into organisational environments reflects broader structural transformations associated with the digital economy, datafication, and the increasing use of artificial intelligence in managerial and operational processes. Digital technologies no longer function solely as tools supporting communication or administrative coordination, but increasingly shape core organisational processes and influence how decisions are made, work is evaluated, and organisational control is exercised. As a result, digital transformation has become not only a technological issue, but also an important organisational, social, and employment-related phenomenon.

These developments have intensified scholarly and policy debates concerning the implications of digital transformation for workers and workplaces. Existing discussions increasingly emphasise that the consequences of digitalisation extend beyond productivity and efficiency outcomes and include important psychosocial and organisational dimensions. In particular, concerns have emerged regarding intensified monitoring, changing forms of managerial control, growing dependence on algorithmic systems, and increasing uncertainty associated with technological change. Such concerns have become especially visible in debates surrounding algorithmic management, platform work, AI-supported management systems, and digitally mediated forms of labour coordination.

At the same time, the effects of digital transformation appear highly uneven across organisations and sectors. Digitalisation does not constitute a single or homogeneous process; rather, organisations adopt different

combinations of technologies that vary in intensity, purpose, and organisational implications. Some forms of digitalisation primarily support communication and operational efficiency, whereas others directly intervene in managerial functions such as monitoring, task allocation, workflow optimisation, and employee evaluation. Consequently, the organisational and psychosocial consequences of digitalisation may depend not only on the presence of digital technologies themselves, but also on how they are configured and embedded within organisational structures and managerial practices.

An additional challenge concerns the organisational governance of digital transformation processes. Increasing attention is devoted to whether organisations possess appropriate mechanisms to identify and manage risks associated with workplace digitalisation, including psychosocial risks related to employment insecurity, surveillance, work intensification, and changing skill requirements. Existing research increasingly highlights the importance of organisational practices such as employee consultation, communication regarding technological implementation, digital skills development, and risk assessment processes accompanying technological change. However, empirical evidence regarding the effectiveness of such governance mechanisms remains relatively limited, particularly in comparative and large-scale organisational analyses.

Despite rapidly growing literature on digital transformation and algorithmic management, several important research gaps remain. Existing studies frequently focus on specific technologies, sectors, occupations, or platform work settings, while less attention has been devoted to broader organisational configurations of workplace digitalisation across diverse work environments. Moreover, relatively limited evidence exists regarding how different forms of workplace digitalisation relate to psychosocial outcomes and whether organisational governance practices influence these relationships.

This study examines the relationship between workplace digitalisation and fear of job loss in European workplaces, with particular attention to the role of digital risk governance. Using data from the Fourth European Survey of Enterprises on New and Emerging Risks (ESENER 2024), covering 41,458 establishments across EU Member States, the study combines latent class analysis and weighted logistic regression models to identify distinct profiles of workplace digitalisation and assess their relationship with employment insecurity. In doing so, the paper contributes to emerging debates concerning the psychosocial implications of workplace digitalisation and the governance of digital transformation in contemporary organisations.

2. Literature Review

2.1 Workplace Digitalisation

Workplace digitalisation refers to the integration of digital technologies into organisational processes, work organisation, communication, and managerial practices (Brennen & Kreiss, 2016; Vial, 2019). Contemporary research increasingly conceptualises digitalisation not merely as the adoption of technological tools, but as a broader socio-technical transformation reshaping how work is coordinated, monitored, evaluated, and controlled within organisations (Jarrahi et al., 2021; Kellogg et al., 2020). In this perspective, digitalisation extends beyond traditional information and communication technologies and encompasses algorithmic management, AI-supported coordination systems, robotics, wearable devices, digital monitoring infrastructures, and data-driven decision-making mechanisms (Baiocco et al., 2022; Duggan et al., 2020).

These technologies increasingly intervene directly in managerial functions previously exercised by human supervisors, including task allocation, workflow optimisation, performance evaluation, scheduling, and behavioural monitoring. As a result, digitalisation alters not only operational processes, but also broader organisational structures, employment relations, and mechanisms of managerial control. Existing literature further emphasises that workplace digitalisation is multidimensional and heterogeneous, as organisations adopt different technological configurations associated with varying organisational and psychosocial implications (Palumbo & Cavallone, 2022; Ren & Chowdhury, 2025; Vial, 2019).

Several studies distinguish between augmentation-oriented forms of digitalisation, which support and complement employees' work, and automation-oriented forms, which substitute labour and intensify algorithmic coordination (Ren & Chowdhury, 2025). Research increasingly suggests that technologies directly involved in monitoring, coordinating, and evaluating work generate stronger psychosocial consequences than technologies primarily facilitating communication or information processing (Palumbo & Cavallone, 2022). In particular, algorithmic management and digital monitoring systems have been associated with intensified surveillance, reduced autonomy, increased work intensity, technostress, and changing power relations within organisations (Duggan et al., 2020; Kellogg et al., 2020). Consequently, workplace digitalisation is increasingly

understood not simply as technological modernisation, but as a transformation of organisational governance and labour control with important implications for worker well-being and employment security.

2.2 Fear of Job Loss

Fear of job loss refers to subjective perceptions of insecurity regarding the continuity and stability of employment (Greenhalgh & Rosenblatt, 1984; Sverke et al., 2002). Unlike objective employment insecurity, which relates to actual risks of unemployment or precarious employment conditions, subjective insecurity reflects employees' expectations and perceptions concerning potential job loss, organisational restructuring, or deterioration of employment conditions. Research consistently demonstrates that employment insecurity is associated with stress, lower job satisfaction, reduced organisational commitment, poorer mental health, and deteriorating well-being (Cheng & Chan, 2008; Sverke et al., 2002).

In the context of workplace digitalisation, fear of job loss has increasingly become linked to automation, AI substitution, changing skill requirements, intensified monitoring, and algorithmic management systems (Dengler & Gundert, 2021; Firk et al., 2023; Müller et al., 2021; Schwabe & Castellacci, 2020). A growing body of literature demonstrates that workers exposed to automation-oriented and algorithmically managed environments are more likely to perceive technological replaceability and employment insecurity (Coupé, 2019; Dengler & Gundert, 2021; Droste, 2020; Kozák et al., 2020; Müller et al., 2021).

Importantly, these concerns extend beyond direct technological substitution and reflect broader anxieties associated with changing forms of organisational control, work intensification, and uncertainty regarding future employability. Research further indicates that monitoring systems and algorithmic evaluation tools intensify perceptions of surveillance, uncertainty, technostress, and loss of control over work processes (Bicchi et al., 2024; Bisht et al., 2023; Firk et al., 2020; Palumbo & Cavallone, 2022). Consequently, fear of job loss increasingly emerges not only as a response to automation itself, but also as a broader psychosocial reaction to digitally mediated managerial control and the transformation of employment relations in increasingly data-driven workplaces.

2.3 Digital Risk Governance

The literature increasingly suggests that the consequences of workplace digitalisation depend not only on technological adoption itself, but also on how digital transformation processes are implemented and governed within organisations (Vial, 2019). In this context, digital risk governance refers to organisational practices aimed at identifying, managing, and mitigating psychosocial and employment-related risks associated with workplace digitalisation (Baiocco et al., 2022; EU-OSHA, 2022).

Existing research emphasises that organisational responses to digital transformation play an important role in shaping employees' perceptions of technological change and its implications for work and employment. In particular, studies identify employee consultation, communication regarding technological implementation, digital skills training, participation in transformation processes, and supportive leadership practices as potentially important governance mechanisms influencing employees' responses to digitalisation (Firk et al., 2020; Firk et al., 2023; Ren & Chowdhury, 2025; Topçuoğlu et al., 2023).

Research further suggests that employee voice and opportunities for digital upskilling may reduce insecurity, digital anxiety, and resistance to technological change while strengthening perceptions of organisational support, employability, and procedural fairness during organisational transformation. At the same time, the literature indicates that governance mechanisms may be particularly important in contexts characterised by algorithmic management and monitoring-intensive forms of digitalisation, where concerns regarding surveillance, autonomy, transparency, and employment security tend to be especially pronounced (Baiocco et al., 2022; Firk et al., 2023).

However, despite growing recognition of the importance of governance practices, empirical evidence remains relatively fragmented and inconclusive regarding their effectiveness in mitigating psychosocial risks associated with workplace digitalisation. Existing studies frequently focus on specific sectors, technologies, or organisational case studies, while comparatively little large-scale comparative evidence exists regarding whether organisational governance mechanisms meaningfully reduce employment insecurity in digitally transforming workplaces.

3. Methodology

The study draws on data from the Fourth European Survey of Enterprises on New and Emerging Risks (ESENER 2024), conducted by the European Agency for Safety and Health at Work (EU-OSHA). ESENER is a large-scale cross-national establishment survey examining occupational safety and health practices, psychosocial risks, and workplace digitalisation across EU Member States. The survey covers establishments with at least five employees across all major sectors. The unit of analysis is the establishment, and respondents are typically managers or OSH specialists responsible for OSH practices. The dataset includes 41,458 establishments, and all analyses apply survey weights to ensure representativeness.

The study adopts a multi-stage quantitative approach combining latent class analysis (LCA) and weighted logistic regression modelling to capture the multidimensional nature of workplace digitalisation. First, LCA was used to identify distinct digitalisation profiles based on patterns of technological adoption across establishments. Binary indicators representing the use of different workplace technologies served as manifest variables. Models with increasing numbers of classes were compared using the Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and average posterior probabilities. The final five-class solution was selected based on statistical fit and substantive interpretability, and establishments were assigned to the class with the highest posterior membership probability. In the second stage, weighted binary logistic regression models examined the relationship between digitalisation profiles and fear of job loss. Additional moderation models tested whether digital risk governance practices influence this relationship. All models controlled for establishment size, sector, and country effects.

Digitalisation profiles were constructed using seven binary indicators capturing the use of workplace technologies (Q310_1–Q310_7): personal computers and fixed workstations, laptops and mobile devices, collaborative robots, automated task allocation systems, employee monitoring systems, wearable devices, and AI-based systems supporting task execution. The final latent class analysis identified five distinct profiles ranging from low/basic digitalisation to advanced integrated and monitoring-intensive digitalisation. The dependent variable is fear of job loss (Q201_3), operationalised as a binary indicator capturing whether the establishment reports fear of job loss as a psychosocial risk affecting employees. Digital risk governance was operationalised as a synthetic additive index reflecting organisational practices related to managing risks associated with workplace digitalisation. The index includes: inclusion of digital technologies in workplace risk assessments (Q252_10), employee training related to digital technologies (Q355_7), and consultation with employees on health and safety impacts of digital technologies (Q314). As the internal consistency of the construct is modest (Cronbach's alpha = 0.49), it is treated as a synthetic governance index rather than a reflective latent construct.

Based on the literature on psychosocial risks and workplace digitalisation presented earlier, the following hypotheses were formulated:

> ***H1.*** *More advanced and monitoring-intensive forms of workplace digitalisation are associated with a higher likelihood of fear of job loss.*
>
> ***H2.*** *Organisations characterised by stronger digital risk governance practices report lower levels of fear of job loss.*
>
> ***H3.*** *Digital risk governance moderates the relationship between workplace digitalisation and fear of job loss, reducing the strength of this association in more digitally intensive workplaces.*

4. Results

4.1 Latent Class Analysis of Workplace Digitalisation

To identify distinct configurations of workplace digitalisation, latent class analysis (LCA) was conducted using seven binary indicators capturing the adoption of digital and algorithmic technologies in establishments (Q310_1–Q310_7). Models with increasing numbers of latent classes were compared using the Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and average posterior classification probabilities. The final model was selected based on both statistical fit and substantive interpretability of the identified classes.

Table 1: Latent class model fit statistics

Number of classes	AIC	BIC	Average maximum posterior probability
2	177,453.6	177,582.6	0.701
3	175,518.6	175,716.4	0.719
4	175,393.7	175,660.3	0.736
5	174,470.3	174,805.8	0.748
6	174,288.7	174,692.9	0.752

Source: Own development based on ESENER 2024 microdata.

The fit statistics indicated substantial improvement between the two- and five-class solutions. Although the six-class model produced slightly lower AIC values, the five-class solution was selected because it provided the best balance between statistical fit, classification quality, and substantive interpretability. The additional sixth class offered limited conceptual differentiation and produced a very small, unstable subgroup. The average maximum posterior probability of 0.748 indicates acceptable classification precision for exploratory organisational profiling.

Table 2: Conditional probabilities and characteristics of latent digitalisation profiles

Technology indicator	Class 1 Low/basic digitalisation	Class 2 Standard digital workplace	Class 3 AI/mobile digitalisation	Class 4 Monitoring/task-allocation profile	Class 5 Advanced integrated digitalisation
Fixed workstations	0.61	1.00	0.89	0.85	0.98
Mobile devices	0.60	0.98	0.99	0.92	1.00
Collaborative robots	0.01	0.03	0.11	0.10	0.40
Automated task allocation	0.03	0.04	0.01	0.39	0.73
Monitoring systems	0.02	0.04	0.08	0.39	0.57
Wearable devices	0.05	0.12	0.24	0.19	0.62
AI-based systems	0.02	0.02	0.35	0.16	0.55

Technology indicator	Class 1 Low/basic digitalisation	Class 2 Standard digital workplace	Class 3 AI/mobile digitalisation	Class 4 Monitoring/task-allocation profile	Class 5 Advanced integrated digitalisation
Weighted class share	15.6%	75.2%	2.0%	6.1%	1.1%

Source: Own development based on ESENER 2024 microdata.

The latent class analysis identified five distinct profiles of workplace digitalisation. The largest group, labelled standard digital workplace (75.2%), is characterised by widespread use of basic digital infrastructures, particularly fixed and mobile computing devices, but limited adoption of advanced algorithmic technologies. The low/basic digitalisation class (15.6%) shows comparatively limited use of all technologies. Three smaller but analytically important profiles represent more advanced forms of digitalisation. The AI/mobile digitalisation profile is characterised by relatively high adoption of AI-based systems and mobile technologies. The monitoring/task-allocation profile displays the strongest concentration of algorithmic coordination and employee monitoring systems. Finally, the advanced integrated digitalisation class combines high probabilities of adoption across nearly all advanced technologies, including AI systems, wearables, monitoring tools, collaborative robots, and automated task allocation systems. To assess the substantive relevance of these profiles, class-specific prevalence of fear of job loss and digital risk governance scores were calculated.

Table 3: Fear of job loss and digital risk governance across latent classes

Latent class	Fear of job loss	Mean digital risk governance score
Low/basic digitalisation	9.0%	1.21
Standard digital workplace	10.7%	1.53
AI/mobile digitalisation	14.4%	2.11
Monitoring/task-allocation profile	15.7%	1.86
Advanced integrated digitalisation	16.3%	2.32

Source: Own development based on ESENER 2024 microdata.

The results indicate a clear relationship between the intensity of workplace digitalisation and fear of job loss. Establishments characterised by advanced and monitoring-intensive digitalisation report substantially higher prevalence of employment insecurity than low-digitalisation workplaces. At the same time, more digitally intensive establishments tend to report stronger digital risk governance practices, particularly within the advanced integrated digitalisation profile. This suggests that governance practices are more common in technologically advanced organisations, although their protective role requires further examination through multivariate analysis.

4.2 Logistic Regression Analysis

To assess the relationship between workplace digitalisation and fear of job loss, weighted binary logistic regression models were estimated. Fear of job loss (Q201_3) was operationalised as a binary dependent variable. Latent digitalisation profiles served as the main explanatory variables, with the low/basic digitalisation profile used as the reference category. All models controlled for establishment size, sector, and country effects.

Table 4: Weighted logistic regression predicting fear of job loss

Predictor	B	OR	95% CI	p
Standard digital workplace	0.184	1.20	1.07–1.35	.002
AI/mobile digitalisation	0.384	1.47	1.13–1.91	.005
Monitoring/task-allocation profile	0.441	1.55	1.31–1.85	<.001
Advanced integrated digitalisation	0.532	1.70	1.23–2.36	.001
Digital risk governance index	-0.006	0.99	0.96–1.03	.755

Source: Own development based on ESENER 2024 microdata.

The regression results confirm that workplace digitalisation profiles are significantly associated with fear of job loss. Compared to low/basic digitalisation workplaces, establishments characterised by monitoring-intensive and advanced integrated digitalisation exhibit substantially higher likelihood of reporting employment insecurity. The strongest effect is observed for the advanced integrated digitalisation profile (OR = 1.70), followed by the monitoring/task-allocation profile (OR = 1.55). The findings indicate that fear of job loss is particularly associated with technologies linked to monitoring, coordination, and algorithmic control rather than workplace digitalisation in general. In contrast, the digital risk governance index does not show a statistically significant direct association with fear of job loss after controlling for structural factors.

4.3 Moderation Analysis

To examine whether digital risk governance moderates the relationship between workplace digitalisation and fear of job loss, interaction terms between latent digitalisation profiles and the digital risk governance index were introduced into the regression model.

Table 5: Moderation model: digitalisation profiles × digital risk governance

Predictor	B	OR	95% CI	p
Standard digital workplace	0.188	1.21	1.07–1.36	.002
AI/mobile digitalisation	0.477	1.61	1.20–2.16	.002
Monitoring/task-allocation profile	0.425	1.53	1.28–1.84	<.001
Advanced integrated digitalisation	0.517	1.68	1.07–2.62	.023
Digital risk governance index	-0.018	0.98	0.89–1.09	.730
Standard × Governance	0.012	1.01	0.91–1.13	.828
AI/mobile × Governance	-0.154	0.86	0.65–1.13	.275
Monitoring/task-allocation × Governance	0.069	1.07	0.91–1.27	.416
Advanced integrated × Governance	0.035	1.04	0.70–1.54	.865

Source: Own development based on ESENER 2024 microdata.

The moderation analysis does not provide evidence that digital risk governance significantly buffers the relationship between workplace digitalisation and fear of job loss. None of the interaction effects reach statistical significance after controlling for structural characteristics and applying survey weights.

The results provide strong support for H1, which assumed that more advanced and monitoring-intensive forms of workplace digitalisation are associated with higher likelihood of fear of job loss. Compared to low/basic digitalisation workplaces, all more advanced profiles exhibit significantly higher odds of reporting employment insecurity. The strongest effects are observed for the advanced integrated digitalisation profile (OR = 1.70; p = .001) and the monitoring/task-allocation profile (OR = 1.55; p < .001), followed by the AI/mobile digitalisation profile (OR = 1.47; p = .005). The standard digital workplace profile also shows a weaker but statistically significant effect (OR = 1.20; p = .002).

In contrast, H2 is not supported. Although the coefficient for the digital risk governance index is negative, the effect remains statistically non-significant in the fully controlled model (OR = 0.99; p = .755). Similarly, H3 is not supported, as none of the interaction terms between digitalisation profiles and the governance index reach statistical significance. Overall, the findings indicate that the organisational configuration and intensity of workplace digitalisation play a more important role in shaping fear of job loss than the governance practices examined in this study.

5. Discussion

The findings provide consistent evidence that workplace digitalisation is associated with increased fear of job loss across European establishments, although the strength of this relationship varies depending on the type and configuration of technologies adopted. In particular, monitoring-intensive and algorithmically coordinated forms of digitalisation are associated with the highest levels of employment insecurity. Establishments characterised by monitoring systems, automated task allocation, and advanced integrated digitalisation report significantly higher probabilities of fear of job loss than low/basic digitalisation workplaces, while more conventional forms of digitalisation exhibit weaker associations with insecurity.

These findings are consistent with previous research linking algorithmic management, digital monitoring, and automation-oriented technologies with psychosocial strain and perceptions of insecurity (Duggan et al., 2020; Kellogg et al., 2020; Palumbo & Cavallone, 2022). They particularly support studies arguing that technologies involved in monitoring, coordinating, and evaluating work generate stronger psychosocial consequences than technologies focused primarily on communication or operational support (Martinez-Balderrama et al., 2024; Ren & Chowdhury, 2025). The strong effects observed for monitoring/task-allocation and advanced integrated digitalisation profiles also align with research emphasising the role of algorithmic management in intensifying perceptions of surveillance, replaceability, and loss of control (Bisht et al., 2023; Bicchi et al., 2024).

More broadly, the results reinforce the argument that workplace digitalisation should be understood not only as technological substitution, but also as a transformation of organisational control and managerial coordination. The strongest associations are linked not to technologies automating production itself, but to technologies reshaping managerial functions such as monitoring, coordination, evaluation, and task allocation. This supports socio-technical and labour process perspectives suggesting that digital transformation increasingly operates through datafication, algorithmic coordination, and intensified managerial visibility (Jarrahi et al., 2021; Kellogg et al., 2020).

An important contribution of the study is the differentiation between digitalisation profiles. Existing research often treats workplace digitalisation as relatively homogeneous or focuses on isolated technologies. By applying latent class analysis, the study demonstrates that workplace digitalisation takes distinct organisational forms associated with different levels of psychosocial risk. Advanced and monitoring-intensive configurations are particularly strongly associated with fear of job loss, while lower-intensity and more conventional profiles produce substantially weaker effects. This suggests that the psychosocial implications of digitalisation depend not only on technological intensity, but also on how technologies are organisationally configured and embedded within managerial practices.

The findings regarding digital risk governance are more complex. Although descriptive results indicated higher governance scores in more digitally advanced establishments, the governance index did not significantly moderate the relationship between digitalisation profiles and fear of job loss. The results therefore provide no evidence that the presence of these governance practices, as measured in ESENER 2024, systematically buffers the association between workplace digitalisation and fear of job loss. Importantly, this null result should not be interpreted as evidence that digital risk governance is ineffective. In this respect, the findings only partially support literature emphasising the protective role of employee participation, communication, and training during digital transformation (Firk et al., 2020; Firk et al., 2023; Ren & Chowdhury, 2025).

Several explanations are possible. First, the index captures the presence of risk assessment, training, and consultation practices, but not their quality, intensity, timing, implementation or credibility to employees. Second, the three components represent different governance mechanisms whose effects may be heterogeneous and therefore partly obscured when combined in an additive index. Third, the higher governance scores observed in more digitally advanced establishments may indicate that governance practices are introduced reactively in response to greater technological exposure or perceived risks, rather than preceding them.

From a practical and policy perspective, the findings indicate that organisations and policymakers should pay greater attention to the psychosocial implications of monitoring-intensive and algorithmically coordinated work environments. Technologies associated with surveillance, automated task allocation, and AI-supported management appear particularly important in shaping employment insecurity. This points to the need for stronger organisational safeguards accompanying digital transformation, including transparent communication, meaningful employee participation, governance frameworks for digital monitoring, and broader integration of psychosocial risk assessment into digitalisation strategies.

Overall, the study highlights the importance of moving beyond simplistic interpretations of digital transformation as either inherently beneficial or harmful. The consequences of workplace digitalisation depend strongly on how technologies are organisationally embedded, governed, and connected to managerial control systems. Understanding these organisational configurations is therefore essential for assessing the broader implications of digital transformation for job quality and worker well-being.

6. Limitations and Future Research

Several limitations of the study should be acknowledged. First, the analysis is based on cross-sectional establishment-level data from ESENER 2024, which limits the ability to draw causal conclusions regarding the relationship between workplace digitalisation and fear of job loss. Although the findings demonstrate statistically significant associations, the directionality of these relationships cannot be definitively established. In addition, the study relies on organisational reporting provided primarily by managers or occupational safety and health specialists rather than individual employee perceptions. Consequently, the analysis may not fully capture subjective experiences of insecurity or differences between occupational groups, hierarchical levels, or categories of workers within establishments.

Second, the operationalisation of workplace digitalisation is based on the presence of specific technologies rather than their intensity, sophistication, or actual mode of use. Although the latent class approach enables identification of broader digitalisation profiles, it cannot fully capture qualitative differences in how technologies are implemented and embedded within managerial systems. Similarly, the digital risk governance index reflects selected governance practices related to digital risk assessment, consultation, and training, but does not encompass broader organisational dimensions such as leadership quality, organisational culture, trust, transparency, or collective representation structures. The relatively modest internal consistency of the governance construct further suggests that digital governance remains conceptually and organisationally fragmented across workplaces.

The findings point to several important directions for future research. Longitudinal studies are needed to examine how workplace digitalisation influences employment insecurity over time and whether governance mechanisms become more effective as organisations adapt to technological transformation. Future research should also investigate more specific mechanisms linking digitalisation to fear of job loss, including perceptions of replaceability, reduced autonomy, technological opacity, and intensified monitoring. In addition, greater attention should be devoted to sectoral, occupational, and institutional differences, particularly regarding how labour market institutions, collective bargaining systems, and organisational governance arrangements shape the psychosocial consequences of workplace digitalisation. Finally, the results highlight the need for more interdisciplinary approaches integrating perspectives from digital transformation, occupational safety and health, labour process theory, and organisational governance in order to better understand the changing relationship between technology, managerial control, and worker well-being.

Ethics Declaration: The study is based on secondary analysis of anonymised organisational-level data from the Fourth European Survey of Enterprises on New and Emerging Risks (ESENER 2024), conducted by the European Agency for Safety and Health at Work (EU-OSHA). The dataset does not contain personally identifiable information, and no direct involvement of human participants was undertaken by the author. Therefore, additional ethical approval was not required for the present study.

AI Declaration: Artificial intelligence tools were used during the preparation of the manuscript to support language editing and text refinement. All analytical procedures, interpretation of findings, methodological decisions, and final content were developed, verified, and approved by the author. The author takes full responsibility for the accuracy, originality, and integrity of the submitted manuscript.

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