

The Impact of Algorithmic Management on Employee Trust and Organizational Commitment

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Abstract

The rapid advancement of artificial intelligence (AI), data analytics, and digital technologies has transformed contemporary Human Resource Management (HRM) practices. **Algorithmic management** is an emerging approach in which algorithms and digital systems are used to allocate tasks, monitor performance, evaluate employees, and support managerial decision-making. While these systems can enhance organizational efficiency and facilitate data-driven decisions, they may also influence employees' perceptions of transparency, fairness, autonomy, and organizational support. These perceptions can have significant implications for employee trust and organizational commitment. The present study examines the impact of algorithmic management on employee trust and organizational commitment in the contemporary workplace. It focuses on employees' perceptions of technology-driven managerial practices and explores how algorithmic decision-making may influence their confidence in organizational processes and their attachment to the organization. The study aims to contribute to the emerging literature on technology-enabled HRM by highlighting the human implications of algorithmic management. It further emphasizes the importance of transparency, fairness, human oversight, and responsible implementation when integrating algorithms into HR practices. The findings are expected to provide useful insights for HR professionals and organizational leaders in developing employee-centred and technologically adaptive workplaces.

Keywords: Algorithmic Management, Employee Trust, Organizational Commitment, Artificial Intelligence, Human Resource Management, Digital Workplace.

1. Introduction:

The rapid advancement of artificial intelligence (AI), data analytics, and digital technologies has transformed the way organizations manage their workforce. Traditional human resource management practices that primarily relied on managerial judgment and interpersonal interaction are increasingly being complemented or replaced by technology-driven systems. One emerging development is **algorithmic management**, in which algorithms and digital systems are used to allocate tasks, monitor performance,

evaluate employees, schedule work, and support managerial decision-making. The growing adoption of such systems has created new opportunities for organizations to improve efficiency, consistency, and data-driven decision-making while simultaneously raising important questions about employees' experiences and perceptions.

Algorithmic management is particularly relevant in contemporary workplaces where organizations increasingly depend on digital platforms and automated decision-making. Algorithms can process large volumes of employee-related data and provide real-time insights into productivity, attendance, performance, workload, and behavioural patterns. From an organizational perspective, these capabilities may support faster decision-making and more systematic workforce management. However, employees may perceive algorithmic systems differently depending on how transparent, explainable, accurate, and fair they consider the technology to be. Excessive monitoring or a lack of human involvement in important employment decisions may create concerns regarding autonomy, privacy, fairness, and job security.

One of the important psychological outcomes associated with algorithmic management is **employee trust**. Trust represents employees' confidence that the organization and its management systems will act fairly, reliably, and in their interests. When employees understand how algorithms make decisions and perceive the process as transparent and fair, they may be more willing to accept technology-driven management practices.

Conversely, limited transparency, unexplained decisions, or continuous digital surveillance may weaken employees' confidence in the organization and its management processes. Therefore, understanding the relationship between algorithmic management and employee trust has become increasingly important for contemporary human resource management.

Another significant organizational outcome is **organizational commitment**. Organizational commitment reflects the extent to which employees identify with their organization, remain willing to contribute to its goals, and desire to maintain their membership in the organization. Employee commitment is influenced by several workplace factors, including organizational support, fairness, leadership, job satisfaction, and trust. As technology increasingly becomes part of employee-management relationships, the manner in which algorithmic systems are implemented may influence employees' attachment to their organizations.

The relationship between algorithmic management, employee trust, and organizational commitment therefore represents an important emerging area of HRM research. Algorithmic systems are not merely technological tools; their implementation can influence employees' perceptions of fairness, autonomy, transparency, and managerial support. A technology-driven management system that improves operational efficiency may not necessarily produce positive employee outcomes if employees perceive the system as intrusive, unfair, or uncontrollable. Consequently, organizations need to consider both technological effectiveness and the human consequences of algorithmic decision-making.

The present study focuses on the **impact of algorithmic management on employee trust and organizational commitment**. By examining employees' perceptions of algorithmic management and their relationship with trust and commitment, the study seeks to contribute to the growing discussion on

technology-enabled human resource management. The findings may provide useful insights for HR professionals and organizational decision-makers in designing transparent, fair, and employee-centred approaches to algorithmic management. The study also highlights the importance of maintaining an appropriate balance between technological efficiency and human judgement in the evolving workplace.

2. Objectives of the Study:

1. To assess employees' perceptions of **algorithmic management** practices.
2. To examine the impact of **algorithmic management on employee trust**.
3. To analyse the relationship between **employee trust and organizational commitment**.
4. To examine the **mediating role of employee trust** between algorithmic management and organizational commitment.
5. To develop an **HRM framework for employee-centred algorithmic management**.

3. Research Methodology:

The study adopts a **descriptive and analytical research design** based on secondary data collected from peer-reviewed journals, books, research reports, government publications, industry reports, theses, and reliable academic databases such as **Scopus, Web of Science, ScienceDirect, and Google Scholar**. The study focuses on existing literature related to **algorithmic management, employee trust, and organizational commitment**, with emphasis on studies published during **2020–2026**. The collected literature will be systematically reviewed and analysed to identify major themes, relationships, research gaps, and emerging trends, leading to the development of a **conceptual framework** for the study.

4. Statement of the Problem:

The increasing adoption of artificial intelligence and algorithm-based systems has transformed traditional Human Resource Management practices, particularly in employee monitoring, performance evaluation, task allocation, recruitment, and decision-making. Although algorithmic management can improve efficiency and facilitate data-driven HR decisions, its growing use may also create concerns regarding transparency, fairness, autonomy, privacy, and reduced human interaction. These concerns can influence employees' trust in organizational systems and, consequently, their commitment towards the organization. Existing studies have examined algorithmic management largely from the perspectives of autonomy, fairness, transparency, and employee well-being, while the interconnected relationship between **algorithmic management, employee trust, and organizational commitment** remains comparatively underexplored. Therefore, the present study seeks to examine how algorithmic management practices influence employee trust and organizational commitment and to develop a conceptual understanding of their relationship in the contemporary digital workplace.

5. Importance of the Study:

The study is significant because algorithmic management is becoming an increasingly important component of contemporary HRM, requiring organizations to balance technological efficiency with employee-centred management. Understanding its influence on employee trust and organizational commitment can contribute to the emerging body of HRM literature by explaining the human and relational consequences of technology-enabled managerial practices. The study may also provide useful insights for HR professionals and organizational leaders in developing transparent, fair, explainable, and

responsible algorithmic practices while retaining appropriate human oversight. From an academic perspective, the study can contribute to the development of an integrated framework connecting algorithmic management with employee trust and organizational commitment, thereby providing a foundation for future empirical research in digital and AI-enabled workplaces.

6. Limitations of the Study:

1. The study is based primarily on **secondary data**, limiting the availability of organization-specific employee perceptions.
2. The findings depend on the **quality, availability, and scope of existing published literature**.
3. Algorithmic management practices vary across **industries, organizations, and geographical contexts**, which may limit generalization.
4. The rapidly evolving nature of **AI and algorithmic technologies** may make some existing findings subject to change over time.
5. Differences in the definitions and measurement of **algorithmic management, employee trust, and organizational commitment** across previous studies may create challenges in comparing findings.

7. Review of Literature

Parent-Rocheleau and Parker (2021) examined how algorithmic management influences job design. They identified functions such as monitoring, goal setting, performance management, scheduling, compensation and job termination. The study highlighted that transparency, fairness and human influence can determine whether algorithmic management creates job resources or demands.

Meijerink and Bondarouk (2021) proposed the concept of the “duality of algorithmic management.” Their study explained that HRM algorithms can increase organizational control while simultaneously creating opportunities for greater employee autonomy and value.

Margherita and Braccini (2022) examined algorithmic management and workplace well-being. Their study indicated that algorithmic practices can affect employee autonomy and perceived justice, which subsequently influence workplace well-being.

Benlian, Wiener, Cram et al. (2022) discussed the positive and negative sides of algorithmic management. The study emphasized the importance of fairness, accountability, transparency and ethics (FATE) and argued that workers should have a role in algorithmic decision-making.

Noponen et al. (2023) systematically reviewed 172 studies on algorithmic management. The review found that algorithmic management can simultaneously restrict and enable employee autonomy and can transform organizational power relationships.

Parent-Rocheleau and Parker (2023) further developed the duality perspective of algorithmic management, emphasizing that HRM algorithms may both restrict and enhance employee autonomy and value. This suggests that the consequences of algorithmic management depend on how the technology is designed and implemented.

Cameron, Herrmann and Nankervis (2024) examined the evolution of algorithmic HRM through a multidisciplinary synthesis. They identified conceptual confusion surrounding algorithmic HRM and highlighted the increasing application of algorithms across HR functions.

Ochmann, Michels, Tiefenbeck, Maier and Laumer (2024) investigated perceived algorithmic fairness in recruitment using 801 participants. The study found that procedural, distributive, interpersonal and informational justice contribute to perceptions of algorithmic fairness, while transparency can influence these perceptions.

Hu, Zeng, Wang and Teng (2024) investigated transparency in algorithmic management and found a transparency–resistance paradox. Their longitudinal study suggested that transparency initially improved fairness perceptions and reduced resistance, but excessive transparency could produce opposite effects.

Moritz and Schmidt (2024) examined trust in algorithmic management and found that the use of algorithmic management was negatively associated with justice and trust perceptions in their experimental study. Justice perceptions mediated the relationship between algorithmic management and trust.

Gong and Fan (2024) conducted a systematic review of 283 articles on algorithmic HRM and developed a functional-affordance perspective. The study highlighted the importance of organizational context, business alignment, adaptability and individual differences in deriving value from algorithmic HRM.

Tandon et al. (2025) explored employee perceptions of algorithmic HRM and identified uncertainty, algorithm aversion and appreciation as important employee responses. The study particularly highlighted concerns about reduced human interaction, job security and trust in algorithmic decision-making.

8. Conclusion

Algorithmic management is emerging as an important component of modern Human Resource Management, offering organizations greater efficiency, data-driven decision-making, and systematic workforce management. However, its effectiveness depends not only on technological capabilities but also on employees' perceptions of **fairness, transparency, autonomy, and human oversight**. These factors can shape employee trust and, consequently, organizational commitment.

The study highlights the need for organizations to adopt responsible and employee-centred algorithmic management practices that balance technological advancement with human values. By strengthening transparency, fairness, and trust, organizations can create sustainable digital workplaces while supporting positive employee–organization relationships.

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