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Reimagining Merit-Based Analytics in Federal and Corporate Decision-Making

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Abstract: ***The article presents a comprehensive analysis of the transformation of the concept of merit in the context of algorithmization of corporate and public governance. The study is carried out within an interdisciplinary framework that includes the sociology of technology, organizational theory, administrative law, and digital analytics. The analysis is based on current publications addressing the shift from a diploma-centered evaluation model to a skill-oriented system, the spread of automated decision-making systems, and institutional initiatives aimed at data democratization. The focus is on the mechanisms of shifting merit criteria from the individual qualities of employees or officials to algorithmic procedures, metadata on the use of government datasets, and user engagement metrics. Key challenges are examined, including the problem of fairness perception under automation, the balance between decision accuracy and transparency, and inclusivity limitations in engaging different user groups. Particular attention is given to the comparative analysis of corporate hiring practices and government data management platforms, which allows for the identification of common patterns in forming new foundations of accountability and legitimacy. It is demonstrated that sustainable governance of merit is possible only when technical efficiency is combined with institutional normativity and ethical oversight. The article may be useful for researchers in management, digital sociology, law, and political science, as well as practitioners involved in implementing algorithmic solutions in the fields of labor and public administration.***

Keywords: merit, algorithmic governance, fairness, data democratization, digital accountability

1. Introduction

Contemporary approaches to evaluating professional qualities and employee effectiveness in governmental and corporate organizations are undergoing fundamental change. The growing volume of information, the increasing complexity of managerial tasks, and the drive to reduce subjectivity in decision-making are pushing a shift away from formalized criteria—such as educational attainment, tenure, and job title—toward more flexible, dynamic systems based on analysis of individual abilities, skills, and behavior in real-world contexts [3]. As a result, there is heightened interest in rethinking the very notion of merit, which is increasingly treated not as a fixed attribute but as a variable determined by specific tasks and contexts.

This problem has become especially salient with the introduction of automated systems for selection, evaluation, and personnel management in both public agencies and private companies. The purported objectivity and efficiency of these systems often conflict with principles of fairness, openness, and participation. In addition, the lack of regulation and common standards creates risks of bias, limits avenues for appeal, and undermines public trust in such systems. Under these conditions, theoretical analysis of the premises and consequences of a transition to analytics-driven, merit-based models takes on particular importance.

The aim of the study is to analyze how the understanding and application of the principle of merit are changing amid the digitalization of managerial practices; to identify potential risks and limitations of existing approaches; and to outline directions for improving analytical mechanisms oriented toward objective and fair evaluation of individuals in governmental and corporate settings.

2. Materials and Methods

The methodological foundation of this study lies at the intersection of management theory, normative analytics, and critical studies of digital technologies. This orientation reflects the intention to treat merit not as a fixed characteristic of the individual but as a variable category formed at the nexus of institutional rules, social expectations, and the technical infrastructure of decision-making. Rethinking the concept of merit requires conceptual analysis and comparison with empirical data that reflect how algorithmic systems function in public and corporate contexts.

The analysis draws on research devoted to selection and evaluation practices during the shift from formal requirements to an emphasis on individual skills. Bone M. [1] presents quantitative evidence of growth in skill-oriented job postings and diminishing weight of degree credentials in hiring. These findings are interpreted as empirical confirmation of a transformation in conceptions of merit and performance in corporate settings. The interaction between algorithmic decision-making and employers' subjective preferences is examined by Bursell M. [2], with special attention to so-called meta-algorithmic judgments and their influence on selection practices. These findings are compared with normative arguments presented by Hunkenschroer A. [4], who considers the use of automated systems in hiring through the lens of human rights and non-discrimination principles.

Of methodological interest are publications describing principles for building systems aimed at reducing bias in selection. Kassir S. [5] proposes a conceptual model that simultaneously satisfies fairness and validity requirements. These provisions are related to a critical analysis of fairness perceptions provided by Starke C. [10], who examines factors shaping acceptance or rejection of algorithmically generated decisions. It is shown that even objectively effective systems

meet resistance in the absence of transparency, opportunities for review, and human participation.

Special attention is given to sources analyzing the transformation of the institutional environment under the influence of digital technologies. Chen M. [3] presents examples of algorithmic regulation at the municipal level, where automation serves as both a management tool and a factor in redistributing power. These conclusions are complemented by Rizk A. [9], who shows how automated decisions alter the balance of roles between citizens and public officials, forming a new structure of responsibility. Important contributions to understanding public-sector context are provided by Potok N. [7], [8], who examines the consequences of implementing data-driven policy and mechanisms for involving different user groups in decision-making.

Accordingly, this study rests on an interdisciplinary selection of sources in which merit is presented as an institutionally constructed category subject to technological, normative, and sociocultural influences. The use of qualitative comparative analysis makes it possible to identify internal contradictions in contemporary evaluation systems and to outline potential avenues for their institutional and normative redesign.

3. Results

The ongoing transformation of the labor market shows a marked departure from evaluating candidates primarily by degree and academic achievements. Bone M. [1] demonstrates that in rapidly developing sectors—especially those linked to artificial intelligence and the green economy—the value of specific professional skills is rising. An empirical analysis of more than 11 million vacancies in the United Kingdom for 2018–2024 reveals declining degree premiums and growing premiums for specialized competencies, indicating a shift toward assessment of practical abilities.

Algorithms used in selection and evaluation procedures formalize this shift, offering tools to compare applicants on the basis of standardized metrics. However, as Bursell M. [2] notes, implementing automated systems does not eliminate the risk of bias; rather, it relocates it to the level of meta-algorithmic judgments when the final decision remains with a manager. An analysis of practices in a major retail chain shows that while algorithms increased women's chances of selection, managers tended to adjust the system's output in favor of candidates with European surnames.

Balancing validity and fairness in algorithmic hiring has become a focal point of debate. Kassir S. [5], drawing on data from the pymetrics platform (400,000 candidates, 60 models), shows that fairness-aware methods can achieve both high predictive accuracy and minimization of discriminatory effects. Reported impact ratios for Black–White, Hispanic–White, and Female–Male groups were 0.93, 0.97, and 0.98, respectively, confirming that bias can be reduced without sacrificing model quality. Such results shape a new understanding of merit as a set of objectively measurable characteristics processed under stringent algorithmic quality controls. Table 1 contrasts traditional and algorithmic approaches to defining merit criteria in hiring.

Table 1: Evolution of merit criteria in hiring (Compiled by the author based on sources: [1,2,5])

Parameter	Traditional approach	Algorithmic approach
Main indicator	Degree	Skills + behavioral patterns
Assumed neutrality	Partial	High (but not guaranteed)
Source of bias	Manager	Data + algorithm + HR context
Correction mechanism	HR training	Fairness-aware ML / Post-hoc audit

The comparative analysis in Table 1 highlights a key vector of change: a transition from formal credential verification to a multi-level system assessing skills and behavioral characteristics. Algorithms provide apparent objectivity and procedural transparency, yet they require ongoing oversight, adjustments, and the implementation of bias-mitigation technologies. The result is a new model of merit in which the decisive factor is not the mere possession of a degree, but the capacity of algorithmic systems to detect and accurately evaluate individual competencies within a dynamic social and economic environment.

The passage of the Evidence Act in 2018 marked a turning point in institutionalizing merit-oriented analytics in public policy. Whereas transparency had previously been largely declarative, the development of the Democratizing Data platform enabled rethinking transparency as a machine-supported instrument that embeds scientific and civic practices in decision-making. Hunkenschroer [4] shows that moving from simply tallying uploaded datasets to building metadata about who uses federal data and how created a new standard of accountability in policy. In this way, the notion of merit shifts into the realm of individual competencies and institutional readiness to ensure the cognitive accessibility of data.

Mechanisms of engagement that evaluate the value of data through actual use take on particular importance. Potok N. [8] describes how the Democratizing Data platform applies machine learning to analyze more than 90 million documents, identifying citations and thematic directions in the use of public resources. Unlike traditional approaches that treat data as a static asset, here data acquire dynamic value determined by the extent of engagement from scientific and civic communities. In essence, merit is expressed in the amount of information gathered and its demand, transforming citizens into active participants in evaluating the fairness and relevance of policy.

New forms of visualization and interfaces that make complex data accessible to the public become a key element. Use of Tableau tools, as described by Potok N. [8], simplifies interpretation of results and integrates mechanisms for collective verification. Public availability and visual clarity foster a kind of "meritocratic accountability," in which the merit of public institutions is gauged by their openness and readiness to provide data for independent analysis. Table 2

systematizes the main components of this platform and their significance for shaping new accountability criteria.

Table 2: Components of the Democratizing Data platform and their significance for fairness (Compiled by the author based on sources: [4,5,8])

Component	Significance
ML-based citation analysis	Identification of current scientific interests
Visualization (Tableau)	Public accessibility and interpretability
Multi-level partnership	Cross-sector validation of fairness
Engagement metrics	Feedback and data re-socialization

As shown in Table 2, data democratization rests on a combination of technical and social mechanisms: citation analysis orients policy toward current topics; visualization guarantees cognitive accessibility; partnership networks enable cross-sector checks on fairness; and engagement metrics bring users into the process of re-socializing information. This architecture defines a fundamentally new model of merit in policy—measured not by bureaucratic reports or formal compliance but by the state's real capacity to weave data into public discourse. This raises the legitimacy of decisions and forms institutional resilience grounded in continuous feedback between government and society.

4. Discussion

Current debates about the boundaries of algorithmic decision-making reveal a central contradiction. Merit in automated decision-making systems is inseparable from how users perceive the fairness of procedures and outcomes. Starke C. [10] shows that perceptions of fairness in algorithmic governance are not universal but depend on task context, the degree of procedural transparency, and the role of humans in the process. Citizens tend to evaluate fairness based on formal criteria of equality or neutrality as well as subjective beliefs about how benefits and harms are distributed [1].

Further analysis suggests that automated systems do not displace human judgment entirely; rather, they shift emphasis from individual interpretation to procedural and outcome fairness. Algorithms set the structure of decision-making, but their legitimacy depends heavily on whether procedures are perceived as transparent and aligned with public expectations. In this respect, human participation remains a critical condition: it mitigates distrust and serves as a feedback channel that compensates for the limitations of machine models [9].

High-stakes scenarios are especially revealing. Bansak K. [6], using a conjoint experiment with more than 9,000 U.S. respondents, shows that in criminal and financial decisions users tend to sacrifice a subjective sense of fairness in favor of maximizing predictive accuracy. The boundary between fairness and merit thus shifts: when the cost of error is high, the decisive criterion becomes not perceived trust but the reliability of the result. This reflects a transformation of merit itself, increasingly defined by algorithmic performance rather than social recognition of procedures. Table 3 summarizes the main parameters of these fairness paradigms and gives examples of algorithmic conflicts that arise when they are violated.

Table 3: Paradigms of fairness in ADM (Compiled by the author based on sources: [3,6,10])

Type of fairness	Characteristic	Examples of algorithmic conflict
Procedural	How the decision is made	Opaque ML models
Distributive	Who gains or loses	False positives / false negatives
Perceptual	How the user evaluates outcome	Loss of trust due to lack of explanations

As Table 3 indicates, procedural fairness is vulnerable to algorithmic opacity; distributive fairness, to systematic errors in allocating benefits and harms; and perceptual fairness, to deficits in explainability. This taxonomy shows that the limits of merit in algorithmic governance lie where the coherence of these dimensions is broken. If a system achieves high accuracy but is not perceived as fair, user trust erodes, threatening institutional legitimacy. Consequently, the boundary of merit is formed at the level of models and data and within the sphere of social recognition of fairness as a precondition for their use.

The introduction of automated decision-making systems changes the architecture of interactions between the state and citizens. Rizk A. [9] introduces the concept of a decision space to describe the transformation of opportunities and constraints facing both officials and service users. Algorithms redistribute emphasis among macro-level institutional structures, micro-level behavioral dispositions, and specific actions. As a result, merit in administrative practice depends less on the individual qualities of a public servant and more on the rules and presets embedded in automated procedures. This shift elevates the importance of procedural logic while narrowing the room for situational discretion, intensifying questions about the fairness and legitimacy of new forms of evaluation.

Institutional efforts to ensure transparency and equal access to data face a number of systemic barriers. Potok N. [7] shows that the Democratizing Data project demonstrates the value of public datasets through metadata about their use but encounters difficulties in standardization, a lack of uniform citation rules, and constrained resources. Continuing this analysis, Potok N. [8] notes that engagement of minorities and researchers from less-resourced organizations remains limited, undermining the principle of inclusivity.

The key challenge is coordinating requirements for performance, ethics, and normativity in algorithmic governance. Large-scale analytical processing calls for speed and maximal accuracy, but these criteria often conflict with needs for explainability and ethical compliance. As experience with automated systems in the public sector shows [9], even high-performing algorithms can undermine perceived fairness when decisions seem opaque or neglect social context. Conversely, excessive formalization can constrain innovation and reduce system flexibility.

Sustainable merit governance under automated decision-making is feasible only within a balanced model in which algorithmic efficiency is complemented by institutional norms and ethical review. This presupposes standards for monitoring and verifying algorithms, expanded practices for

user engagement, and adequate resourcing for platforms like Democratizing Data [7], [8]. Otherwise, overemphasis on technological performance risks eroding trust and weakening institutional legitimacy.

5. Conclusion

This study establishes that automation and the introduction of algorithmic systems are radically changing conceptions of merit in both corporate and public governance. Merit ceases to be a static reflection of a degree or formal procedure and is increasingly defined by systems' and institutions' capacity to ensure fairness, transparency, and effective outcomes. In labor-market hiring, emphasis is shifting from formal education to skills and behavioral characteristics, which requires new evaluation criteria and mechanisms for controlling algorithmic distortions. In public administration, merit is measured not by declarative reporting but by the state's actual ability to circulate data in the public domain, thereby laying the groundwork for accountability and trust.

Comparative–analytical review of the sources shows that algorithms simultaneously open opportunities for increased efficiency and heighten risks related to the loss of human discretion, institutional opacity, and social exclusion. Notably, perceptions of fairness remain the boundary condition for deploying automated solutions. Users are willing to recognize the primacy of accuracy and performance only insofar as there remains an opportunity for explanation and understanding of procedures. At the same time, institutional projects for democratizing data show potential to lower barriers and broaden engagement but confront limitations in standardization, resources, and inclusivity.

Accordingly, the decisive factor in sustainable merit governance under algorithmization is not the universality of tools used but their capacity to combine effectiveness with ethical and normative oversight. In the digital era, merit becomes the outcome of balancing technical performance, institutional transparency, and societal feedback. Only by maintaining this balance can algorithmic solutions strengthen trust and legitimacy in both corporate and public institutions.

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