

# Job Crafting and Motivational Evolution in the AI Era: The Dual-Path Motivational Evolution Embedded in AI Work — Capability Paradox and Relational Restructuring

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**Abstract:** Against the backdrop of artificial intelligence (AI) technology continuously integrating into organizational operations and job practices, traditional motivation theories, constrained by static research assumptions, struggle to reasonably explain the complex situation where employees experience both increased and decreased motivation. Rooted in motivational psychology and integrating Expectancy Theory with Self-Determination Theory, this paper constructs a dual-path motivation analysis framework. Focusing on two core characteristics—the capability paradox and relationship reconfiguration—the paper systematically explores the dynamic evolution patterns and intrinsic mechanisms of employee motivation in AI application scenarios. Empirical analysis based on multi-time-point tracking data reveals that AI integration into work settings primarily influences individual motivation systems through two paths: task reshaping and cognitive reshaping, resulting in differentiated impacts. High cognitive demand jobs commonly exhibit a capability paradox where “objective performance improves while subjective competence perception declines”, a contradiction significantly alleviated by employees’ AI literacy. Meanwhile, employees’ perceptions of work relationships are undergoing profound transformations, shifting from traditional interpersonal emotional support orientation to a rational orientation with clearly defined rights and responsibilities, with increased collaboration frequency failing to synchronously enhance relationship security. From a dynamic perspective, this study expands the applicability boundaries of classical motivation theories, providing robust theoretical support and practical references for organizations to optimize motivation management, refine incentive systems, and assist employees in better adapting to career transitions in AI-enabled environments.

**Keywords:** Artificial intelligence; Job crafting; Dual-path motivation; Capability paradox; Relationship reconfiguration; Motivational psychology

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## 1. Introduction

In recent years, the accelerated deployment of generative AI across various organizations has not only reshaped work content structures and team collaboration models but also profoundly altered the intrinsic formation logic of employee work motivation. Classical motivation theories, developed within relatively stable traditional work environments, are built on the core logic of a stable correspondence between effort, performance, and reward. However, the widespread adoption of human-machine collaboration has disrupted this inherent transmission chain, leading to significant changes in individuals' perceptions of the value of effort, the attribution of performance, and expectations of rewards. Concurrently, the three core psychological needs proposed by Self-Determination Theory—autonomy, competence, and relatedness—exhibit distinct connotations and manifestations in traditional work settings due to the interplay of multiple factors such as the prevalence of algorithmic management, blurred responsibility boundaries, and reconstructed value perceptions.

Among existing studies, scholars like Zheng Xiaoming have repeatedly emphasized that AI applications not only alter task completion methods and work efficiency but also deeply influence employees' sense of competence, autonomy experiences, and self-worth judgments, necessitating adaptive adjustments to traditional incentive methods in response to changes in the technological environment<sup>[1]</sup>. Despite the growing body of research, significant gaps remain in current discussions on AI and employee work motivation. First, most studies adopt a static analytical perspective, focusing solely on unidirectional changes in motivation, making it difficult to explain the contradictory state where employee motivation both increases and decreases in reality. Second, although the coexistence of performance improvement and competence anxiety in high cognitive jobs has been mentioned in academia, sufficient empirical support has yet to be established regarding the formation conditions, impact boundaries, and mechanisms of this capability paradox. Third, systematic research on the transformation of organizational relationship models triggered by human-machine collaboration is lacking, with the trend and intrinsic mechanisms of employees' relationship perceptions shifting from traditional emotional bonds to modern, clearly defined rights and responsibilities remaining to be further clarified.

Based on these research gaps, this paper proposes the core viewpoint that changes in employee motivation in the AI era follow a dual-path dynamic logic. The expectancy path corresponds to changes in motivation intensity brought about by task reshaping, while the Self-Determination Theory path corresponds to changes in motivation quality triggered by the reconstruction of three core psychological needs. In this process, a stable capability paradox exists in high cognitive jobs, and the core source of employee relationship satisfaction has shifted from traditional interpersonal care to modern collaborative relationships with clearly defined rights and responsibilities. This paper incorporates the capability paradox and relationship reconfiguration into a unified dual-path model, extending classical motivation theories towards dynamic and contextualized directions, aiming to provide a more explanatory theoretical framework for understanding employee work motivation in AI-enabled environments and offering theoretical references for organizations to optimize incentive mechanisms and adapt to technological changes.

## 2. Theoretical framework

### 2.1. Stability changes in expectancy theory in AI contexts

As human-machine collaboration gradually becomes a normalized work mode, the stable transmission

mechanism underlying Expectancy Theory is significantly disrupted, with the Expectancy-Instrumentality-Valence (E-I-V) logical chain exhibiting characteristics of weakening, fluctuation, and boundary blurring. At the expectancy level, work outcomes are co-created by human employees and AI systems, diluting the marginal contribution of individual effort to final output and significantly reducing the causal certainty between effort and work performance. At the instrumentality level, the attribution of labor outcomes in human-machine collaboration is difficult to clearly define, decreasing the transparency of the correspondence between performance and rewards, and leaving employees unable to effectively predict whether their personal contributions will be accurately recognized, objectively evaluated, and fairly fulfilled by the organization. At the valence level, employees increasingly value career growth, work autonomy, and long-term development value, with the marginal utility of traditional material incentives continuously weakening and their attractive power gradually declining. Through task decomposition, process automation implementation, and auxiliary work replacement, AI continuously weakens the stability of the expectancy transmission path, ultimately triggering dynamic fluctuations and structural reconstruction in employee work motivation.

## **2.2. Boundary expansion of self-determination theory**

Combining the real-world scenario of deep AI integration into the workplace, this paper extends the interpretation of the three core psychological needs in Self-Determination Theory <sup>[1]</sup>. Autonomy exhibits structural differentiation; in high-autonomy, high-creativity jobs, AI primarily serves as an enabling auxiliary, effectively broadening employees' decision-making boundaries and creative spaces; whereas in low-autonomy, high-standardization jobs, AI is often deeply bound with algorithmic monitoring, continuously compressing employees' space for autonomous decision-making and flexible adjustments. The capability paradox becomes increasingly prominent; although AI significantly enhances objective work efficiency, it simultaneously raises overall industry work standards, weakening individual professional uniqueness and discernibility, resulting in employees' subjective sense of competence not increasing but decreasing, a problem particularly evident in high cognitive load, high professional threshold jobs. Perceptions of interpersonal relationships undergo transformations; the human-machine collaboration model significantly boosts collaboration efficiency but also triggers issues such as responsibility dispersion and outcome attribution ambiguity; employees' social connection needs no longer solely rely on interpersonal warmth but increasingly value the delineation of rights and responsibilities and boundary definition, with a clear responsibility attribution and division of labor system gradually becoming the core key to satisfying workplace relationship needs.

## **2.3. Dual-path motivation integration model**

Based on the aforementioned theoretical analysis, this paper further constructs a dual-path motivation evolution model. The transmission logic of the expectancy path is as follows: AI embedding → task reshaping → fluctuations in the Expectancy-Instrumentality-Valence chain → changes in motivation intensity <sup>[2]</sup>. Task reshaping can directly adjust employees' cognitive judgments of the relationships among effort, performance, and rewards, ultimately affecting motivation strength levels. The transmission logic based on Self-Determination Theory is as follows: AI embedding → cognitive reshaping → reconstruction of three core psychological needs → iterative changes in motivation quality. Cognitive reshaping profoundly influences employees' subjective psychological experiences in terms of autonomy, competence perception, and belongingness, thereby determining the quality and sustained stability of intrinsic motivation. The

two evolutionary paths are relatively independent and perform their respective functions while also being interconnected and mutually coupled, systematically explaining the complex reality in AI application scenarios where employee motivation both increases and weakens, and positive and negative experiences intertwine, thus forming the core analytical framework of this study.

### **3. Research methodology**

#### **3.1. Research design and sample**

This study adopts a multi-time-point longitudinal research design, enabling a more precise capture of the dynamic evolution characteristics of employee motivation during the application of artificial intelligence (AI), effectively circumventing biases prone to cross-sectional studies. The research leverages a pre-established sample database to obtain survey data, ultimately selecting 503 valid samples covering multiple industries such as finance, professional services, manufacturing, and the internet. The age range of respondents spans from 22 to 53 years old, with 72.96% holding a bachelor's degree or higher, indicating a relatively high overall educational attainment that aligns with the structural characteristics of professionals in AI application scenarios. Additionally, the sample demonstrates balanced distribution across three core dimensions—cognitive demand, structural autonomy, and task interdependence—ensuring good individual heterogeneity and effectively guaranteeing the generalizability and applicability of the research findings.

#### **3.2. Variable measurement**

The degree of AI integration is measured using a five-item scale, incorporating multiple dimensions such as usage frequency, task coverage, decision-making impact, and workflow transformation for comprehensive evaluation <sup>[3]</sup>. For dual-path motivation, the expectancy path is measured across three dimensions: expectancy, instrumentality, and valence; the path based on self-determination theory is measured across three dimensions: autonomy, perceived competence, and relatedness satisfaction. The capability paradox is operationally defined by the difference between objective performance improvement and subjective perceived competence levels, with interaction terms introduced to examine its effects. Relationship reconstruction is primarily assessed using three core indicators: collaboration frequency, accountability clarity, and relationship security. AI literacy, as a moderating variable, is measured using a standardized mature scale; age, education level, job type, industry, and duration of AI use are set as control variables to effectively exclude interference from irrelevant variables and ensure the accuracy of research results.

#### **3.3. Analysis strategy**

This study employs SPSS 26.0 and AMOS 24.0 for data statistics and analysis, strictly adhering to standardized research procedures to sequentially conduct reliability and validity tests, common method bias tests, correlation analysis, hierarchical regression analysis, and simple slope analysis. The research focuses on validating the fit validity of the dual-path model, exploring differences in the effects of the capability paradox across groups with varying levels of cognitive demand, analyzing the buffering moderating effect of AI literacy, and revealing the reconstruction patterns of relationships between variables. Through multi-dimensional and multiple tests, the study ensures that the conclusions are robust, scientific, and reliable.

## **4. Research results**

### **4.1. Dual-path motivation model test**

The overall model fit is good (CFI=0.932, TLI=0.917, RMSEA=0.075), with all indicators meeting common criteria in the fields of psychology and management, effectively validating the rationality and fit of the dual-path research framework. The expectancy path analysis reveals that AI integration significantly negatively predicts perceived expectancy and instrumentality while significantly positively influencing growth valence, suggesting that AI intervention weakens employees' subjective perceptions of effort controllability and reward stability while making them value growth and development in their work more <sup>[4]</sup>. The path test based on self-determination theory shows that AI integration significantly negatively affects employees' perceived autonomy and competence while positively influencing accountability clarity, indicating that AI application somewhat undermines employees' autonomous work experience and self-assessment of competence but optimizes interpersonal and work relationship boundaries, promoting clearer responsibility delineation. Both paths pass significance tests, jointly explaining the complex intrinsic mechanisms of employee motivation evolution in AI work contexts.

### **4.2. Capability paradox test**

Hierarchical regression results show that the interaction term between AI integration and cognitive demand significantly negatively predicts perceived competence, indicating that cognitive demand plays a moderating role in the relationship between AI integration and individual perceived competence. Group tests further reveal that in the high cognitive demand group, AI integration significantly positively predicts objective performance and negatively predicts subjective perceived competence, with the capability paradox effect significantly established; however, in the low-to-medium cognitive demand group, these effects do not reach significance <sup>[5]</sup>. This result confirms that the capability paradox has clear boundary conditions, primarily occurring in high-professional, high-intellectual-input work scenarios. Additionally, AI literacy has a significant buffering effect on the capability paradox, with employees possessing high AI literacy experiencing significantly less weakening in subjective perceived competence, suggesting that a good understanding and application of AI can effectively alleviate self-doubt and career anxiety triggered by technological application.

### **4.3. Relationship reconstruction results**

The analysis of relationship reconstruction indicates that deep AI integration significantly enhances collaboration efficiency and interaction frequency both within and outside organizations, but somewhat weakens employees' relationship security and emotional belonging <sup>[6]</sup>. Accountability clarity significantly positively predicts employee relationship satisfaction, serving as a core factor enabling the fulfillment of employee relationship needs in human-machine collaboration scenarios. Further group tests show that in high task interdependence contexts, the positive impact of accountability clarity on relationship satisfaction is more pronounced. This conclusion further confirms that, under the backdrop of digital and AI empowerment, employee relationship perception is gradually shifting from traditional interpersonal warmth and emotional attachment to a new logic characterized by clear rights and responsibilities and explicit responsibility delineation, profoundly revealing the novel characteristics and developmental patterns of organizational interpersonal relationship evolution in human-machine collaboration models.

## **5. Conclusion and discussion**

### **5.1. Theoretical contributions**

This study achieves three significant theoretical breakthroughs in the fields of motivation psychology and AI organizational behavior research. It breaks through the limitations of traditional static research paradigms by constructing a dynamic dual-path integration model, effectively explaining the dynamic evolution characteristics of employee motivation—characterized by intertwined strengths and weaknesses, as well as coexisting positive and negative aspects—in AI contexts, opening up a new theoretical perspective for subsequent research in this field. It formally proposes and empirically tests the capability paradox, clarifying the intrinsic mechanisms underlying the divergence between objective performance and subjective perceived competence in high-cognitive jobs, filling a research gap in the contradictory relationship between technological empowerment and employee psychological experiences<sup>[7]</sup>. It redefines the core connotations of relationship needs in the AI era, identifying accountability clarity as a key foundation for new relationship satisfaction, further broadening the explanatory scope of self-determination theory in digital technology scenarios. The study's conclusions align with the dynamic development perspective of motivation theory advocated by scholars such as Zheng Xiaoming, providing systematic and integrated theoretical references and research ideas for employee work motivation research in AI environments<sup>[8]</sup>.

### **5.2. Practical implications**

From an organizational management perspective, enterprises can develop differentiated incentive plans based on the characteristics of dual-path motivation. For high-cognitive jobs, they should strengthen competence recognition, value empowerment, and work autonomy while reducing excessive algorithmic control and rigid process constraints; establish clear accountability mechanisms and division of responsibilities in team collaboration to effectively avoid responsibility dispersion and reduce internal consumption; and comprehensively enhance employees' overall AI literacy through systematic training and practical exercises to alleviate psychological burdens and career anxiety caused by capability imbalances<sup>[9]</sup>.

From an individual development perspective, employees need to actively improve their skills in AI operation, content verification, tool optimization, and human-machine collaboration, clarify their core values through cognitive restructuring, and gradually transition from mere task executors to efficient human-machine collaboration managers; build stable collaboration models based on clear rights and responsibilities and standardized boundaries to enhance interpersonal collaboration stability and work fulfillment, thereby better adapting to career development changes and job requirements in the AI era.

### **5.3. Research limitations and prospects**

This study only uses short-term tracking data, failing to fully cover the entire lifecycle of AI technology penetration, popularization, and deep integration, making it difficult to fully reveal the long-term evolution characteristics and intrinsic laws of employee motivation; the research sample primarily focuses on knowledge workers in enterprises, with limited coverage of public sector, highly automated, and frontline operational jobs, thus requiring further validation of the external validity and generalizability of the research conclusions. Future research can conduct long-term, large-sample, cross-scenario longitudinal tracking studies to compare the differential characteristics of employee motivation under different institutional environments, cultural backgrounds, and industry attributes, systematically clarify the long-term evolution

logic of the capability paradox and workplace relationship reconstruction; and integrate multiple research methods such as case analysis and experimental research to deeply analyze the micro-psychological mechanisms underlying the dynamic changes in employee motivation, providing more realistic and practical reference plans for various organizations to optimize management strategies and conduct human resource governance during digital transformation.

## 6. Conclusion

The comprehensive and deep integration of AI into various work scenarios has driven profound transformations in the employee motivation system. Its evolution process generally follows the dual-path dynamic logic of expectancy theory—self-determination theory, presenting complex characteristics of coexisting motivation enhancement and weakening, as well as intertwined external institutional incentives and individual intrinsic needs. High-cognitive-demand jobs generally exhibit a significant and stable capability paradox, characterized by steady improvements in objective work performance while subjective perceived competence continues to weaken; workplace relationship perception also shifts from traditional interpersonal warmth and emotional support to a rational collaboration model with clear rights and responsibilities and well-defined job duties, with increased collaboration frequency not synchronously enhancing employees' interpersonal relationship security. Employees' overall AI literacy can effectively buffer technological impacts, alleviate negative biases in self-capability perception, and reduce negative psychological feelings triggered by intelligent work modes. Based on a dynamic research perspective, this study extends and refines classical motivation theories, systematically revealing the intrinsic core mechanisms of employee motivation evolution in AI-empowered contexts, providing theoretical foundations and practical plans for enterprises to optimize incentive systems, conduct employee mental health management, and plan individual long-term career development, as well as offering important references for the collaborative symbiosis and long-term development of organizations and individuals in human-machine collaboration scenarios<sup>[10]</sup>.

## Disclosure statement

The author declares no conflict of interest.

## References

- [1] Zheng XM, Zhang MY, 2024, How Enterprises Can Continuously Activate Employees' Work Motivation. *Tsinghua Management Review*, 2024(7–8): 36–45.
- [2] Zheng XM, Zhong J, 2024, In the Era of Generative Artificial Intelligence, Where Is Your Career Anchor? *Tsinghua Management Review*, 2024(10): 58–67.
- [3] Zheng XM, Li LY, Gao XY, 2023, The Configurational Effect of Employees' Proactive Behaviors: A Process-Based Perspective. *Acta Psychologica Sinica*, 55(5): 792–811.
- [4] Zhang YJ, Zheng XM, 2025, The Double-Edged Sword Effect of Crisis Event Intensity on Employees' Proactive Behaviors: The Moderating Role of Crisis Leadership. *Advances in Psychological Science*, 33(6): 987–1001.
- [5] Deci EL, Ryan RM, 2020, Self-determination Theory: A Motivational Theory for the AI Era. *Annual Review of Organizational Psychology*, 2020(7): 119–146.
- [6] Yu Y, 2025, Management Reshaping in the AI Era. *Entrepreneur*, 2025(4): 48–51. <https://doi.org/10.3969/>

j.issn.1674-1315.2025.04.015

- [7] Wang Z, 2024, Research on the Impact of Digital Transformation on Employees' Job Crafting, thesis, Henan University.
- [8] Chang Y, 2024, The Impact of Artificial Intelligence Knowledge on Creativity: The Roles of Job Crafting and Task Complexity, thesis, Shanghai University of Finance and Economics.
- [9] Liu YR, Sun J, 2025, The Reshaping of Labor Education in the Artificial Intelligence Era. *Journal of China Institute of Industrial Relations*, 39(6): 73–82. <https://doi.org/10.3969/j.issn.1673-2375.2025.06.007>
- [10] He H, 2025, Creating Value with AI Is the “Iron Rice Bowl” in the AI Era. *Chinese Businessmen*, 2025(10): 97. <https://doi.org/10.3969/j.issn.1005-5266.2025.10.042>

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