

Study on the Adaptive Innovation Path of Labor Value Theory under the Perspective of New Quality Productive Forces

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ABSTRACT

New quality productive forces not only represent an innovation and development of general productivity theory but also pose challenges to the adaptive innovation of Marxist labor value theory in the context of current economic and social development. By reviewing the labor value theory and analyzing the current status of economic and social development, this paper identifies theoretical challenges to the labor value theory, including the diversification of labor forms, the complexity of value creation and evaluation mechanisms, the fairness of value distribution, as well as ethics and sustainability. It proposes adaptive innovation paths for the labor value theory under the conditions of new quality productive forces, providing a new perspective for understanding the theoretical and practical adaptability of labor value theory in the new economic environment. This has significant reference value for guiding policy-making, enterprise development, and social equity.

KEYWORDS

Labor value theory; New quality productive forces; Adaptive theory; Innovation path

1. INTRODUCTION

New quality productivity, characterized by high technology, efficiency, and quality, marks a shift from traditional economic growth models. It is driven by integrated innovations in information technology, artificial intelligence, biotechnology, and other cutting-edge fields, reshaping production methods, social structures, and values at an unprecedented scale. This transformation not only intellectualizes production tools and automates processes but also redefines production relations and value creation mechanisms. In this context, the Marxist labor theory of value, which traditionally emphasizes labor as the sole source of value, faces significant challenges and calls for theoretical innovation to remain relevant (Zhou, Wen, et al. 2023).

The traditional labor theory, rooted in Marx's critique of capitalist production, highlights the decisive role of labor in creating social wealth. However, with the rise of new quality productivity, the boundary between labor and capital has blurred. Intelligent machinery and advanced algorithms increasingly simulate human labor, leading to a convergence of physical and non-physical labor forms. This includes knowledge-intensive, innovative, data processing, and information analysis labor, presenting a severe challenge to classical labor theory. The theory must now extend its evaluation system to encompass these non-material forms of labor, particularly in defining and quantifying their contributions.

Data, as a key production factor in the new economy, plays an increasingly crucial role in value creation. Understanding and evaluating the value generation mechanism of data labor within the labor

theory framework is essential for theoretical innovation. Data labor involves collecting, processing, analyzing, and innovatively using information, requiring a model that reflects its unique value while integrating it with traditional labor concepts. This is vital for addressing the complex dimensions of value creation and realization in the digital economy.

The rapid rise of the digital economy has not only enhanced production efficiency and expanded economic boundaries but also sparked debates on value distribution fairness and social justice. Traditional labor theory urgently needs expansion to ensure technological benefits are broadly and fairly distributed. This requires building an inclusive value evaluation system that accurately recognizes and rewards different forms of labor, ensuring fair participation in the labor market (Pu, Qingping, et al. 2023).

To address the risk of social stratification due to technological progress, the practical application of labor theory must be integrated into detailed social policies and institutional arrangements. Public policy interventions, such as progressive taxation, social welfare programs, worker rights protection, and education and skills upgrading, are necessary to promote equality of opportunity and mitigate the impact of technological changes on vulnerable groups, maintaining social stability and harmony.

In conclusion, the labor theory of value under new quality productivity conditions demands both theoretical reflection and practical guidance to address emerging issues and contradictions. This paper aims to explore the theoretical tensions and adaptive paths of the labor theory of value in response to these challenges.

2. THEORETICAL CHALLENGES OF LABOR VALUE THEORY POSED BY NEW QUALITY PRODUCTIVE FORCES

2.1. The Inherent Categories of Labor Value Theory

In the context of new quality productive forces, the traditional boundaries between labor and capital have become unprecedentedly blurred, posing a profound challenge to the inherent theoretical categories of labor value theory. The foundation of labor value theory is built on the centralized perception of direct human labor, which is regarded as the fundamental driver of value creation. However, with the widespread adoption and deepened application of intelligent technologies and other forms of embodied labor in production activities, the roles and value contributions of human labor and machine labor in the production process have become increasingly indistinct.

This emerging hybrid labor model necessitates a reexamination and reconstruction of the concept of "labor" within the framework of labor value theory, exploring how to reasonably incorporate and accurately assess the value creation pathways of the synergistic effects between human and machine labor (Huang, Jingqiu, et al. 2023). This process requires theoretical innovation that not only accounts for the diversification and complexity of labor forms brought about by technological progress but also maintains fidelity to the core principles of labor value theory, achieving an organic update and adaptation to contemporary conditions. This means delving into the interactive mechanisms of labor processes assisted by technology, clarifying the logic of value distribution between human guidance and machine execution, and developing a new theoretical paradigm that can both reflect the essence of labor in real production activities and effectively integrate the value assessment of various labor forms. Such a paradigm will guide practice and promote the continuous development of economic theory.

2.2. Sources and Evaluation Criteria of Value Creation

With the vigorous rise of the knowledge economy and digital economy, there has been a significant increase in non-material forms of labor, particularly high-intelligence activities such as creative conception, design innovation, and R&D exploration. This trend raises new theoretical questions

about the sources and evaluation criteria of value creation within traditional labor value theory. The characteristics of this type of non-material labor—its intangibility, high level of innovation, and uncertain outcomes—transcend the traditional linear measurement framework of labor value theory, which primarily relies on labor time and intensity. It necessitates a deeper exploration of how to reposition and accurately quantify the value of such labor within this theoretical framework.

Data, as a key production factor in the new economic era, plays an increasingly central role in the value creation chain, posing another dimension of challenge to labor value theory. How to appropriately place data labor within the theoretical system of labor value theory and scientifically evaluate the specific contributions of data to value generation has become a critical issue that requires in-depth exploration by the academic community (Jin, Ziwan, et al. 2021). Data not only serves as raw material input into the production process but its processing, analysis, and application are also key links in value creation and enhancement. The intellectual investment and innovative labor involved in this process must be integrated with traditional labor value to build a new value evaluation system. Therefore, exploring the value quantification paths for non-material labor and data labor, and constructing a value evaluation model adapted to the features of the new economy, is of great theoretical and practical significance for enriching and developing the theoretical content of labor value theory.

2.3. Value Distribution and Social Justice

The rapid development of new quality productive forces has transformed production methods and challenged traditional labor value theory. In the growing knowledge and information economies, individual compensation is now more tied to knowledge capital, skills, and education than to labor volume, exacerbating income disparities (Wu, Lu, et al. 2016). This shift sparks debates on fairness and justice, demanding theoretical innovation in labor value theory.

To address these challenges, labor value theory must evolve by re-examining and optimizing value distribution mechanisms. Theoretically, it should incorporate the role of knowledge and skills, constructing a composite evaluation system that reflects both labor contributions and knowledge elements. Practically, policy innovations like progressive taxation, universal education access, lifelong learning, and fair labor market rules are essential to ensure equitable sharing of technological and economic benefits across society.

2.4. Methods for Measuring Labor Value

The evolution of new quality productive forces has reshaped production and economic structures, challenging traditional labor value theory. While labor time was once a sufficient metric, it now fails to capture the complexity of modern labor due to advancements in information and intelligent technologies. New measurement paradigms are needed, incorporating dimensions like labor complexity, innovation (Wu, Huan, et al. 2016), knowledge content, and social impact. Metrics such as labor complexity indices and innovation value coefficients can better assess diverse labor forms, including knowledge work and data processing. Models must also quantify synergies from team collaboration and technology-assisted productivity. These innovations should ensure fair value distribution, integrating social ethics, labor rights, and environmental sustainability.

3. THEORETICAL ADAPTABILITY OF LABOR VALUE THEORY UNDER NEW QUALITY PRODUCTIVE FORCES

3.1. Expansion and Deepening of Theoretical Content

In the context of economic transformation driven by new quality productive forces, labor value theory must evolve to integrate modern economic characteristics while preserving Marx's core concept of

labor as the source of value. This evolution transcends material production labor, embracing a broader framework that equally values material and non-material labor, crucial in knowledge-intensive and digital economies. It evaluates non-physical labor forms like creative thinking, data processing, and knowledge flow, which, though lacking traditional outputs, are vital to the value creation chain (Yan, Jinqiang, et al. 2022).

The theory must broaden its definition of "labor" to include intelligence-assisted work, remote work models, and sharing economy interactions. This expansion captures labor diversity, demonstrating inclusivity and relevance to contemporary issues. Additionally, it explores the social and cultural dimensions of labor, recognizing that labor activities reproduce social relations and transmit cultural values. In the knowledge economy, human capital—knowledge, skills, and creativity—becomes integral to value creation (Jiang, Yaodong, et al. 2021). Thus, labor value theory should incorporate individual knowledge accumulation, education, and innovation capabilities, enriching and adapting the traditional framework to reflect modern economic realities.

3.2. Innovation in Measurement Methods

Innovations in measurement methods are essential for adapting labor value theory to new quality productive forces. Traditional metrics based on labor time are inadequate, necessitating a multi-dimensional system that considers intellectual intensity, innovation, technology, and social welfare. Leveraging advancements in statistics, machine learning, and big data can precisely quantify diverse labor forms and reveal non-linear value creation relationships. Interdisciplinary integration, including psychology and sociology, provides deeper insights into workers' motivations and social interactions (Zhang, Hontao, et al. 2022). A dynamic, flexible evaluation system ensures timely adjustments, aligning theory with the rapidly changing labor market.

3.3. Reconstruction of Value Distribution Theory

The reconstruction of value distribution theory, an adaptive dimension of labor value theory, addresses social implications in the new economic landscape. It aims to ensure fair and efficient distribution, preventing imbalances between laborers and capital holders. This requires linking value creation with distribution mechanisms and exploring practical paths for rational distribution.

In the knowledge economy, intangible factors like knowledge capital and innovation are crucial. The theory must incorporate evaluation systems for these elements to respect and incentivize intellectual labor (Li, Chunjian, et al. 2022). Social equity is also key, protecting vulnerable groups through measures like equal education access, progressive taxation, and improved social security, reducing income inequality and promoting inclusive economic benefits and social stability.

4. INNOVATIVE FRAMEWORK OF LABOR VALUE THEORY UNDER NEW QUALITY PRODUCTIVE FORCES

4.1. Expansion and Deepening of the "Labor" Category

The expansion of the "labor" category under new quality productive forces marks a profound shift in labor value theory. This evolution moves beyond traditional physical labor to include non-material forms such as intelligence-assisted, knowledge-based, creative, and data processing labor. This theoretical expansion reflects modern economic structures, aiming to construct a framework that fairly evaluates diverse labor forms in the new economy (Wei, Xu, et al. 2021).

This shift redefines labor from concrete to abstract, integrating both tangible and intangible aspects. Intelligence-assisted labor highlights the symbiosis between technology and human effort, emphasizing human-technology interaction. Knowledge labor acknowledges the value of information

capital, aligning with the Marxist concept of "general intellectual labor," which underscores the role of knowledge and skills in value creation.

Creative labor emphasizes innovation and imagination, positioning labor as cultural and symbolic production, resonating with Baudrillard's theory of symbolic consumption. Data processing labor addresses emerging forms in the information age, treating data as a means of production, thus linking it to Marx's duality of production means and labor power (Ren, Baoping, et al. 2023).

By redefining labor, this framework provides a philosophical basis for an innovative labor value theory, offering a broader perspective that adapts to and guides practice. This reconstruction enriches labor value theory and addresses complex issues of value assessment and distribution in the new economic landscape.

4.2. Expansion and Deepening of the "Labor" Category

The new labor value theory retains labor time and intensity as foundational elements but introduces additional indicators—intellectual intensity, innovation, technological content, and social impact—to form a multi-dimensional assessment system. This approach aims to accurately map complex value creation in the new economy, especially for data labor, quantified through algorithmic models.

Intellectual intensity measures professional knowledge and skills using a knowledge-skills matrix, providing a weighted score for expertise. Innovation is assessed via an index that combines frequency, novelty, and impact, reflecting contributions to technological progress. Technological content evaluates tool maturity and productivity gains, ensuring advanced technologies are recognized. Social impact assesses improvements in welfare, culture, and sustainability, forming a comprehensive score. This integrated system ensures a more accurate evaluation of labor's value in the modern economy (Huang, Zaisheng, et al. 2022).

4.3. The Fairness of Value Distribution Principles is Enhanced

Under new productive conditions, the innovative labor theory of value aims to enhance fair value distribution, ensuring technological benefits are widely shared and social harmony is maintained. This involves optimizing income distribution through a progressive tax system to reduce income inequality and improve access to public services. Intellectual property rights are rationally allocated to encourage innovation while preventing monopolies, protecting innovators' rights, and promoting technology diffusion. The education system ensures equal opportunities and lifelong learning, enhancing low-income groups' competitiveness and adaptability to technological changes. Protection strategies for vulnerable groups, such as minimum living guarantees and unemployment assistance, provide basic security. Inclusive growth strategies, like skill training and support for small businesses, ensure all can benefit from technological progress, fostering harmonious economic and social development.

5. CONCLUSION

This article has conducted a comprehensive and in-depth discussion on the adaptability and innovative framework of the labor theory of value in the context of new quality productive forces, revealing significant transformations in the expansion of theoretical connotations, diversification of value creation and assessment mechanisms, strengthening of fairness in value distribution principles, and internalization of ethics and sustainability. It can be seen that the labor theory of value is no longer simply adhering to the traditional manufacturing era's measurement of labor time and intensity, but has expanded to include knowledge labor, intelligent-assisted labor, creative labor, data labor, and other diverse forms, forming a comprehensive concept of labor, which makes value assessment more comprehensive.

The innovation in value creation and distribution mechanisms, through diversified indicators such as intellectual intensity, innovation, technological content, and social impact, as well as precise quantification of data labor, has achieved a comprehensive mapping of value creation. It also emphasizes the fairness of distribution, ensuring reasonable returns for knowledge capital and innovation contributions, protecting vulnerable groups, and maintaining social harmony. The internalization of ethics and sustainability, through the consideration of environmental costs, green labor, the practice of a circular economy, and the maintenance of supply chain ethics, ensures the advancement of economic development alongside environmental protection, reflecting respect for human dignity.

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