

The Present and Future of Accounting Transformation: Systematic Insights based on the Quantitative Analysis of CNKI Literature

Kaiwen Tan, Guoyu Mao

School of Management, Sichuan Light Chemical Engineering University, Yibin 644000, China

Abstract

Under the background of the accelerated development of digitalization and intelligence, the accounting discipline is undergoing a profound paradigm transformation. This study is based on 207 literatures related to accounting transformation collected in CNKI core journals from 2014 to 2023. CiteSpace knowledge graph tool is used for bibliometric analysis, and key word co-occurrence analysis, cluster analysis and time graph are adopted. This paper systematically reveals the hot spots, evolution trend and future development path of accounting transformation research. The results show that the strategic transformation of accounting function, the deep integration of digital technology and accounting practice, and the innovation of accounting education are the core issues of the current accounting transformation research. This study not only provides a systematic knowledge structure and in-depth insight into the research direction for the field of accounting transformation, but also provides theoretical support and practical guidance for accounting practice, and defines the areas that future research should focus on in order to promote the sustainable development of accounting discipline under the background of new technologies.

Keywords

Accounting Transformation; Digital Transformation; Knowledge Graph; Accounting Education.

1. Introduction

With the continuous innovation of digital technology, under the background of big data, simple financial accounting can no longer meet the development needs of enterprises, and the accounting industry is undergoing profound transformation and change (Qi Yongxing, 2019). As a global development trend, "Internet plus" has become an important force driving social and economic development, and has also brought unprecedented opportunities and challenges to the accounting industry (Zhang Ling, 2017). The Accounting Informatization Development Plan (2021-2025) clearly emphasizes the strategic importance of accounting digitalization, which is not only the inevitable path of technological progress, but also a necessary measure for enterprises to adapt to market dynamics and enhance competitiveness. In the process of promoting intelligent accounting, actively embracing or passively accepting the trend of digital transformation is essentially an important means and inherent requirement to accelerate the digital upgrading of enterprises (Wang Aiguo, 2021). Under the background of the rapid development of digital economy and intelligent economy, the accounting function is gradually extending from the traditional accounting role to a more strategic field to better adapt to the new needs of the digital age.

Although accounting digital transformation has become a hot topic in academic research (Shi Qiuxia, 2023), there are still many shortcomings in the existing research. Firstly, there is a lack of systematic classification and analysis of the types of accounting transformation. Secondly,

the overall reflection on the transformation process under the background of digitalization is insufficient. These questions show that although digital transformation has received widespread attention, the systematic and in-depth research needs to be strengthened. Therefore, this study aims to comprehensively summarize the research hotspots, development trends and frontier trends in the field of accounting transformation through bibliometric analysis, and make up for the shortcomings of current literature in classification, induction and process reflection.

By using visual analysis tools such as CiteSpace, this study systematically combs 207 literatures on accounting transformation in CNKI core journals from 2014 to 2023 and analyzes the knowledge graph, so as to reveal the knowledge structure and future development direction of this field. Through this approach, this study attempts to identify potential gaps in existing research, fill in the gaps regarding the classification of transition types, and deeply reflect on the overall process of accounting transformation in the context of digitalization. This can not only provide a clearer theoretical framework for the accounting field, but also provide effective theoretical support and guidance for the practical accounting transformation, so as to promote the sustainable development and competitiveness of enterprises under the background of the new era.

2. Data Sources and Research Methods

2.1. Data Source

China National Knowledge Network (CNKI) is one of the most comprehensive academic resource databases in China, integrating journals, academic papers and other academic resources, and is an ideal data source for bibliometric analysis. In this study, a systematic review method (PRISMA framework) was used to select data from CNKI, which ensured the scientificity and broad representativeness of the study. The specific search process takes "accounting transformation", "accounting digitalization" and "smart accounting" as the keywords, and the search time covers January 1, 2014 to December 31, 2023, and is limited to core and above level journals of Peking University. After rigorous screening, invalid literature (such as no author, no keyword, no publication year or literature inconsistent with the research theme) was eliminated, and 207 valid literature were finally identified, laying a solid data foundation for literature quantitative analysis.

2.2. Research Method

In this study, CiteSpace, a widely used visual analysis tool, was used for systematic bibliometric analysis. With its efficient information visualization function, CiteSpace can support keyword co-occurrence, clustering and time series analysis to reveal the structure and dynamic evolution of the domain. Through the collation of multidimensional data such as keywords and publication time of 207 literatures, the paper generates the publication trend chart and the keyword co-occurrence chart, showing the research status and hot spots in the field of accounting transformation. By further using keyword cluster analysis and time graph, the core issues and frontier trends in this field are revealed, which provides important enlightenment and prospect for future research. This method can not only visually present the whole picture of the existing research, but also better understand the research path and development trend of accounting transformation.

3. Analysis of Research Results

3.1. Document Statistics

Literature statistics in the field of accounting transition in China in the past 10 years (Figure 1) show that from 2014 to 2019, the number of publications was relatively stable, maintaining

about 10 to 20 papers per year, reflecting that the research in the field of accounting transition was relatively stable during this period, without significant breakthroughs or changes. However, since 2020, the number of published documents has gradually increased, especially in 2022 and 2023, the growth trend is particularly obvious. This change is likely to be closely related to the acceleration of the digital transformation of the accounting industry, the application of emerging technologies (such as blockchain, artificial intelligence, etc.), and changes in the global economic environment. Technological progress and the growth of industry demand are the main factors driving the active research on accounting transformation. For example, the application of big data analysis, electronic invoicing, process automation, financial cloud and other technologies is gradually promoting the transformation of the accounting industry to the direction of digitalization and intelligence.

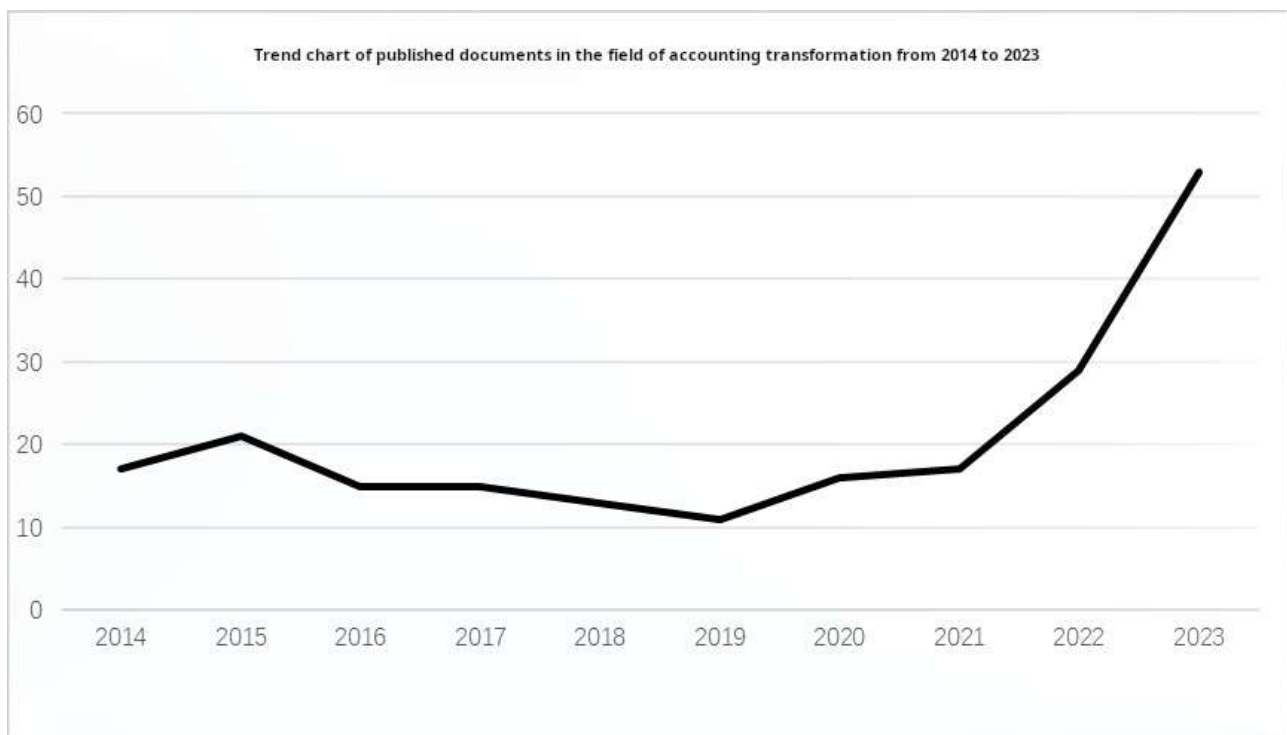


Figure 1. Accounting transition topic literature publication statistics

In addition, policy promotion and talent training have also provided an important boost to the increase in the number of papers. Policy documents issued by the government and industry organizations, such as the Outline of the 14th Five-Year Plan for Accounting Reform and Development, provide clear guidance and policy support for the digital transformation of the accounting industry. At the same time, the training of accounting talents and professional skills improvement programs (such as the accounting informatization development plan and the industry talent development plan) also promote the research and development of accounting transformation. Overall, the growth in the number of publications in the field of accounting transformation not only reflects the profound changes in the industry driven by technology, policy and business needs, but also indicates that the accounting industry will continue to make efforts in the application of technology, data governance, risk management and talent training in the future to better respond to the challenges and opportunities of the digital age.

3.2. Keyword Co-occurrence Analysis

Through the keyword co-occurrence chart drawn by CiteSpace software (Figure 2), the research hotspots and structural characteristics in the field of accounting transformation can

be visually seen. Nodes in the figure represent keywords, the size of nodes is proportional to the occurrence frequency of keywords, and the lines between nodes represent the co-occurrence relationship of keywords in the same literature, reflecting the correlation between them.

According to Figure 2, "management accounting", as the central node, indicates that it occupies a core position in the accounting transformation research. Keywords closely related to "management accounting" include "artificial intelligence", "digitalization", "financial transformation", "digital economy", etc., indicating that these issues are the core content of current accounting transformation research, with high co-occurrence frequency, showing their significance and interconnectedness in the field (Xu Hui, 2020). In addition, the figure also shows keywords such as "smart accounting", "talent development" and "big data", although these nodes are relatively small, they maintain a certain correlation with the core theme, indicating that these areas are also receiving more attention in accounting transformation research, reflecting the potential for future development.

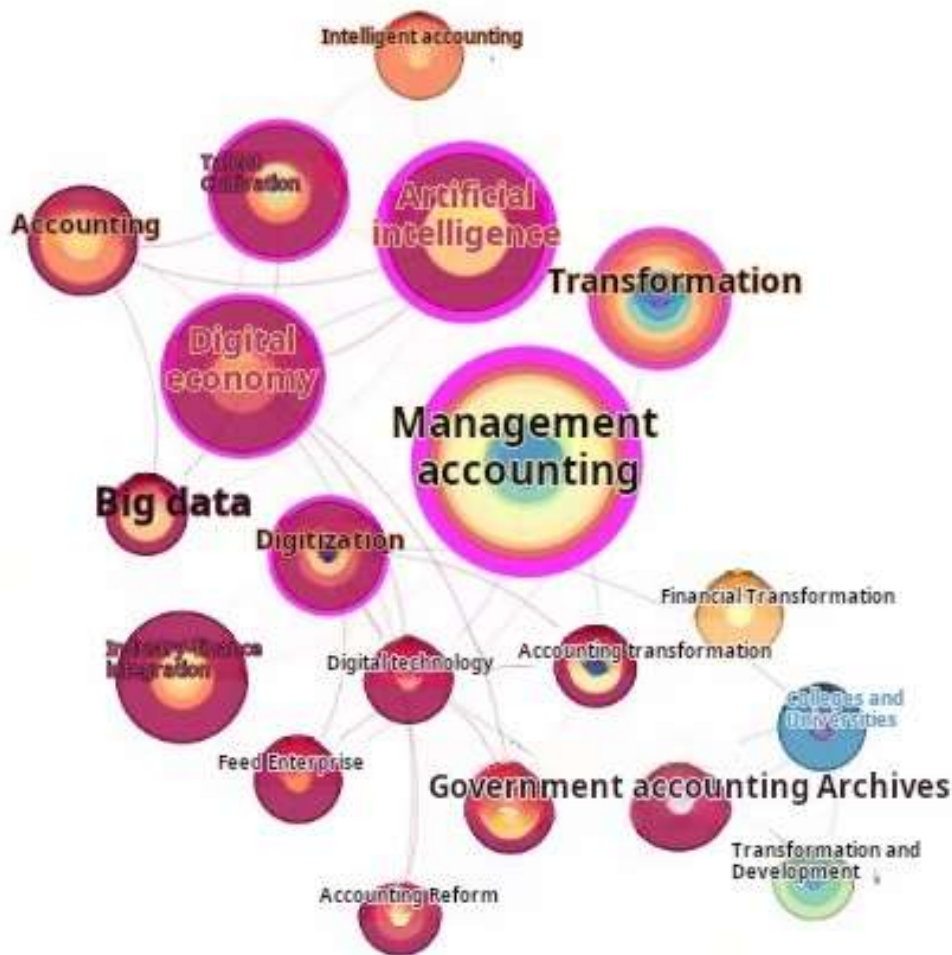


Figure 2. Keyword co-occurrence diagram

As can be seen from Figure 2, current research focuses on the deep integration of emerging digital technologies and accounting practices, especially how to improve the strategic decision support and value management capabilities of accounting functions through new technologies such as "artificial intelligence" and "big data" (Zhang Lin, 2015). In addition, "talent cultivation", as a key node, also reflects that in the digital background, how to improve the technical ability of accounting practitioners has become an important content of research (Xu Jingchang, 2019).

This co-emergence analysis reveals research directions that may need further exploration in the future, including: how to realize the strategic transformation of accounting function under the background of digitalization, how to effectively apply intelligent technology to support the innovation of accounting education, and how to promote government accounting and accounting reform to better adapt to the development needs of the digital economy. These findings provide important theoretical support and practical guidance for sorting out the academic trends and future research directions in the field of accounting transformation.

3.3. Key Words Cluster Analysis

The keyword cluster graph generated by CiteSpace (Figure 3) reveals the core research themes and development trends in the field of accounting transformation. Different color clusters represent different research topics, and the size and density of clusters reflect the research activity of the topic and its influence in the field. Combined with cluster charts and related literature, the current research topics of accounting transformation can be summarized into three categories: "accounting digitalization and technology-driven transformation", "management accounting and value creation transformation" and "accounting education and policy transformation", which systematically reveal the main research directions of accounting transformation.

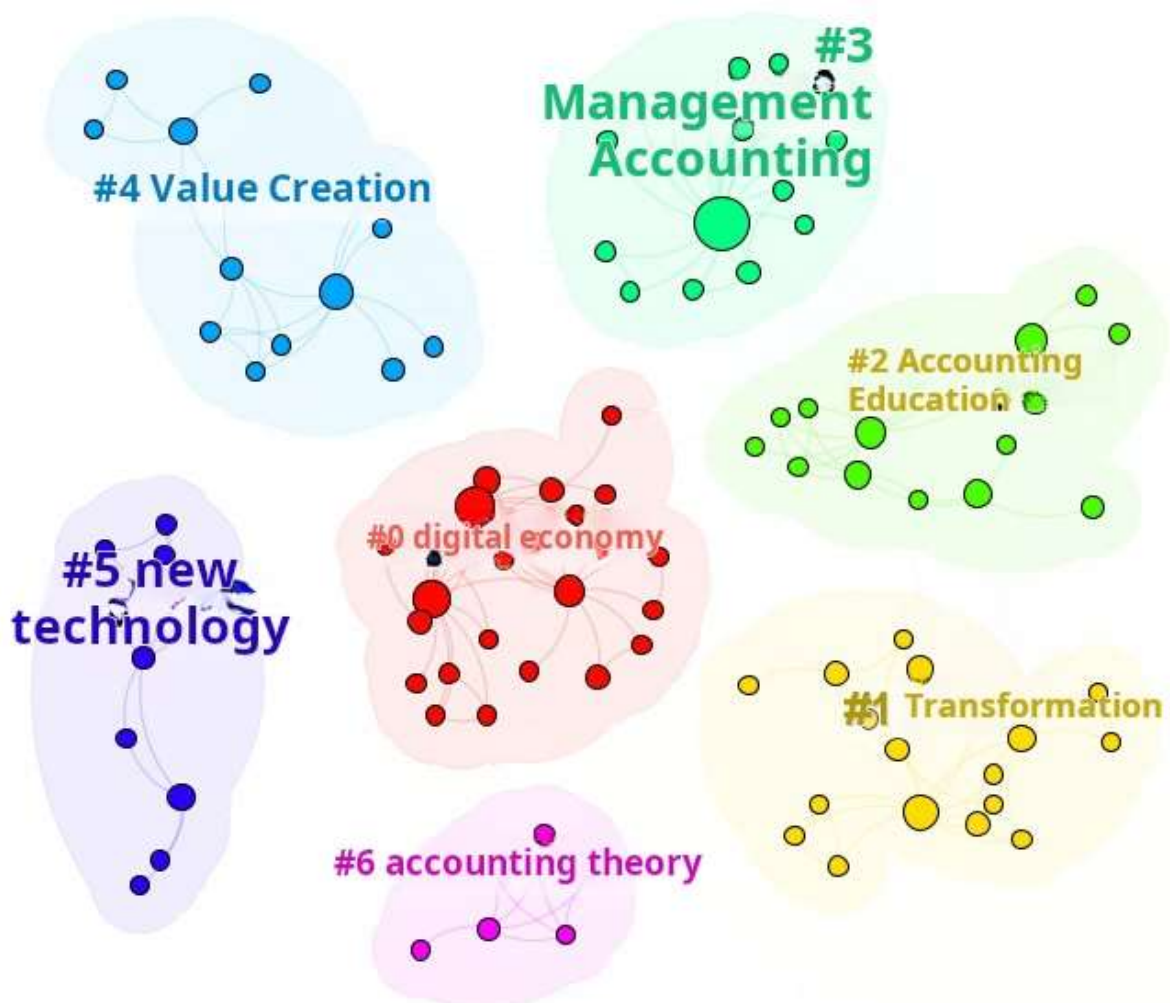


Figure 3. Key words Cluster graph

3.3.1. Accounting Digitalization and Technology-Driven Transformation

Accounting digitalization and technology-driven transformation cluster mainly covers topics such as digital economy, transformation, and new technologies, focusing on how the accounting industry uses emerging technologies (such as big data, blockchain, cloud computing, etc.) to achieve digital upgrading and process automation in the context of digital economy. This clustering covers the wide application of intelligent technology in accounting practice, aiming to improve the efficiency and accuracy of accounting process (Xu Guanghua, 2015). With the rapid development of intelligent technology, great changes have taken place in daily production and life style, and the traditional theory of technological tools has been subverted (Dong Muxin, 2022). In this context, the researchers focused on the development of automated accounting processes, such as the automation of accounting records and reporting through machine learning and natural language processing techniques. Yang Liang (2017) pointed out that there is still a big gap between the current management accounting informatization and enterprise management needs, and comprehensive budget management, financial shared service center (FSSC), business intelligence (BI), etc., have not fully realized the integration of industry and finance, so they cannot effectively support the economic decision-making of enterprises. Liu Shangxi (2023) further proposed that accounting digitalization mainly creates added value of products through the application of data resources, and improves operations and business behaviors through the effective transmission and feedback of information, and the timeliness and accuracy of data become the key factors. Sun Hongliang (2023) emphasized that the application of platform system will promote accounting agents to jump out of the scope of traditional financial accounting, achieve deep collaboration at the business system level, and form a more comprehensive management support system.

In terms of data analysis and reporting, researchers focus on how to extract valuable business insights through big data technology, build predictive models to help managers make smarter decisions, and identify potential financial risks through data mining technology (Xu Jinye, 2023). Hui Hong Xu (2021) proposed that the intelligent accounting system will gradually transition from the traditional mode of isolated use to the mode of "platform + application" to meet the needs of the digital age. In addition, the application of cloud computing has also become a hot topic in academia. Xu Huihong (2022) pointed out that cloud computing not only provides elastic computing resources and data storage capabilities, but also plays an important role in reducing operating costs and improving data processing efficiency, providing technical support for further optimization of accounting processes.

To sum up, the research on accounting digitalization and technology-driven transformation cluster covers many aspects such as how to optimize accounting process, enhance business collaboration ability, and tap business value through digital tools. These studies provide theoretical support and practical guidance for the digital transformation of accounting, point out the direction for the future development of accounting functions of enterprises, and promote the intelligent and efficient development of accounting in the digital economic environment.

3.3.2. Management Accounting and Value Creation Transformation

Management accounting and value Creation transformation cluster mainly covers management accounting and value creation and other topics, focusing on supporting enterprises' strategic decision-making and value creation through management accounting innovation means. This class of studies explores how management accounting can improve the efficiency of enterprise management, optimize the allocation of resources, and promote the deep integration of finance and business under diverse business models and organizational structures to promote the sustainable development of enterprises.

In this area, scholars have focused on how emerging digital technologies can be used to reshape the management accounting function to improve information relevance and decision support capabilities. For example, researchers have explored how to integrate data-driven decision models into management accounting, optimize the generation and transmission of accounting information, and improve the accuracy of financial forecasts with the help of machine learning algorithms. In addition, the inclusion of environmental, social and governance (ESG) factors has become one of the important directions of accounting transformation. Wang Shijie (2023) pointed out that in the era of digital intelligence, the structure, organizational form and right allocation of economic and social elements will undergo profound changes, which requires management accounting to constantly adjust and adapt, otherwise its role in enterprise management may be weakened or even marginalized. Xu Jinye (2015) pointed out that the transformation of enterprise management has become a necessary condition for economic development, and management accounting must be transformed from traditional financial accounting to management accounting to better support the management needs of enterprises. Zhang Gexing (2017) further proposed that management accounting should be transformed from "calculating accounts after the event" to "calculating wins before the event", from the role of simply reflecting business results to the role of helping enterprises create value and supporting diversified business models and organizational structures.

In addition, the transformation of management accounting and value creation also involves a rethinking of risk management and internal control mechanisms. In the context of digitalization, enterprises face complex challenges such as data security, privacy protection, and cyber attacks, which put forward higher requirements for traditional internal control and risk management (Lai Yongtian, 2021). Sun Fangcheng (2018) stressed that blockchain technology has important potential in improving the security and transparency of accounting information, especially in the application of ensuring the immutability of transactions and enhancing audit trail capabilities, which provides a guarantee for the reliability of accounting information systems. In addition, artificial intelligence and machine learning technologies are gradually integrated into risk management and internal control, effectively improving the efficiency and quality of internal control by automating the identification of potential risks and optimizing the internal audit process. The application of digital tools enables enterprises to monitor financial activities in real time, providing management with more timely and accurate information to help them effectively deal with potential risks in strategic decisions. To sum up, the research on management accounting and value creation transformation not only reflects the academic community's attention to the in-depth reform of management accounting, but also provides important theoretical support and practical guidance for enterprises to improve management level, optimize resource allocation and create higher value through innovative means. These studies point the way for enterprises to achieve sustainable development in the digital age.

3.3.3. Accounting Education and Policy Transformation

The Accounting Education and Policy Transformation Cluster covers research topics such as accounting education and accounting theory, with a focus on training accounting talents to adapt to the digital age, and driving dynamic adjustment of accounting theory and policy to fit the evolving accounting environment. The research covers the modernization of accounting education management, the adaptation of accounting policy making, and the development of future-oriented high-quality accounting professionals by updating educational content, such as adding data analysis and programming courses. The intelligent era is constantly changing the supply and demand structure of the factor market, and colleges and universities, as the cradle of accounting talents training, are bound to adapt to the requirements of enterprise intelligent accounting upgrading in the intelligent era and make a transformation (Pan Songjian, 2023). With the rapid development of information technology, the traditional accounting education model is gradually unable to meet the practical needs (Li Hui, 2023). Therefore, researchers

suggest that the content of accounting education should be updated to integrate digital technology-related knowledge and skills into the curriculum system, and focus on cultivating students' technical ability and innovative thinking (Zuo Yan, 2016; He Chuantian, 2014). For example, programming and data analysis courses are introduced in accounting education to enhance students' technical application skills and data analysis skills. The innovation of teaching methods has also become an important topic of research, and scholars have explored how to use online education platforms, simulation laboratories and other means to improve the interactive and practical teaching to meet the new teaching needs. Zhang Junrui (2022) suggested that "digital economy + differentiation", "intelligence + differentiation" or "big data + differentiation" should become the main direction of MPAcc talent training in the future to respond to talent needs in the context of digital economy. Xu Yi (2020) pointed out that with the rapid expansion of the scale of accounting data and the improvement of information complexity, accounting professionals should not only possess traditional recording and accounting capabilities, but also master big data mining and analysis capabilities, so as to improve the ability of data processing and business insight. Luan Fugui (2017) argues that understanding life philosophy and practical application by using accounting theories and methods can effectively improve the comprehensive quality of accounting professionals and help the transformation of accounting education.

The change of skill demand is also one of the core issues in the transformation of accounting education. The academic community proposes to train accounting talents with interdisciplinary knowledge and data analysis ability through education system reform to meet the needs of enterprises in intelligent decision support (Wang Yongde, 2015). Liu Yue (2014) pointed out that technical skills such as data analysis and programming have become an important dimension of vocational competency and a key part of the reform of accounting education system in the digital era (Deng Deqiang, 2018). These studies provide a solid theoretical foundation and practical guidance for the transformation of accounting education, and promote accounting talents to better meet the diversified needs of enterprises and adapt to the complex and changeable accounting environment in the era of digitalization and intelligence.

3.3.4. Key Words Mutation and Time Graph Analysis

According to the keyword mutation map, the research hotspot and dynamic evolution of accounting discipline in a specific period of time can be identified more clearly. As a bibliometrics analysis tool, keyword mutation map measures the academic attention of a specific keyword in a certain period through the index of "emergence intensity", and reveals the changing trend and hot topics in the research field.

As can be seen from Figure 4, the focus of research in the field of accounting has undergone significant changes. For example, early research focuses on traditional fields such as "management accounting" and "universities" (Wu Aili, 2014; Li Mingjuan, 2015), which reflected the academic community's continued attention to these core issues at that time. With the advancement of technology, keywords such as "artificial intelligence", "intelligent accounting" and "data governance" have gradually become the focus of research, indicating that emerging technologies have had a profound impact on the accounting discipline. Pan Shangyong (2016) pointed out that mobile Internet, artificial intelligence, big data and other technologies have had a multidimensional impact on the finance and accounting industry, and promoted the shift of research focus. Wen Subin (2022) further pointed out that the research hotspots of intelligent accounting continue to evolve closely with the pace of technological development, and the research granularity is gradually refined, reflecting the trend that the academic and practical circles actively respond to and guide the development of enterprises in the face of new technological background.

Top 21 Keywords with the Strongest Citation Bursts

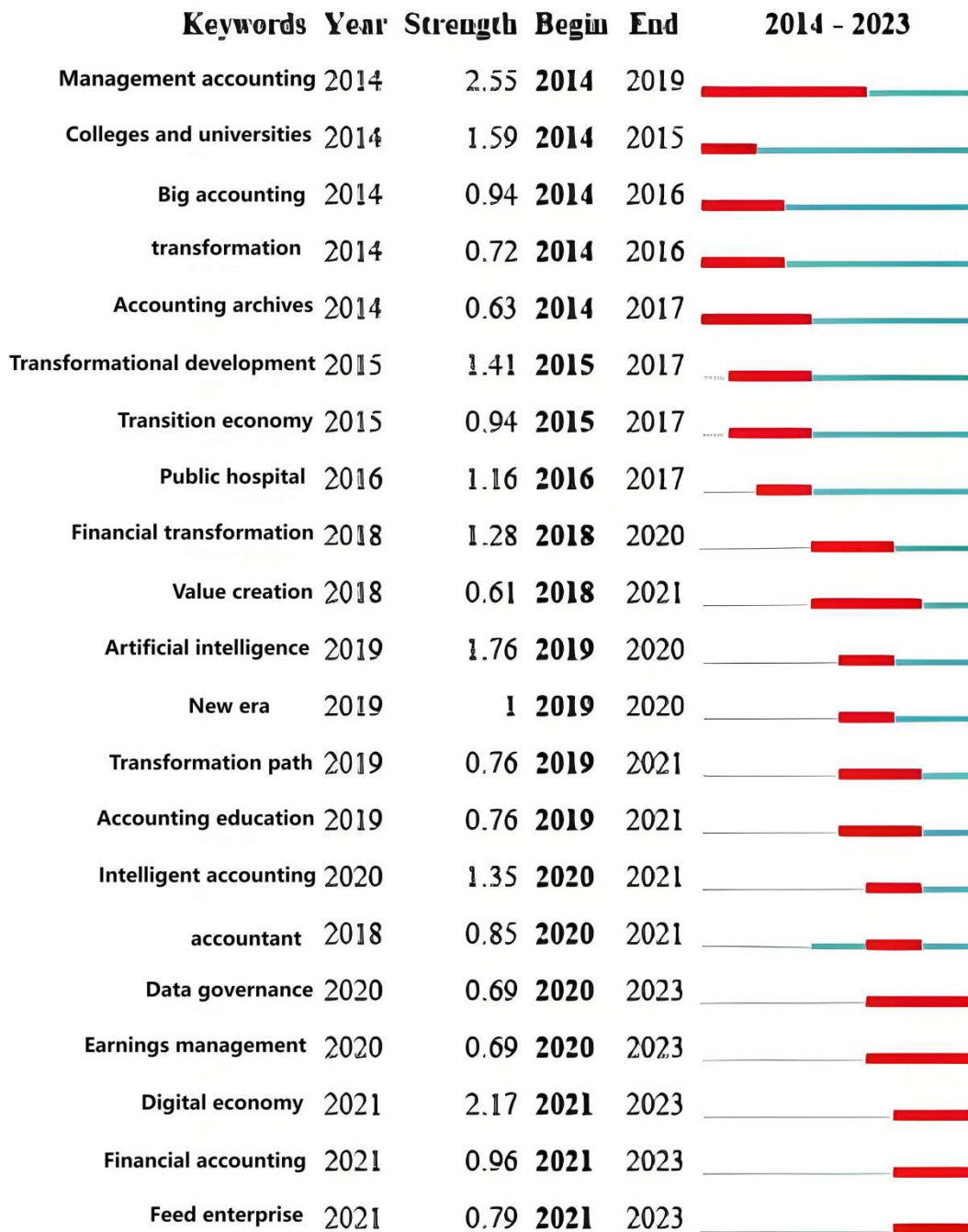


Figure 4. Keyword mutation map

In addition, the keyword mutation map also reveals emerging research trends in the accounting discipline. Keywords such as "digital economy" and "data governance" have shown strong emergence in recent years, indicating that these areas will become a new focus of research in the future. These trends reflect the dynamic adaptability of the accounting discipline as it ADAPTS to technological change and global economic development. Wen Subin (2022) emphasized the reform of how to use emerging technologies such as big data and artificial intelligence to empower accounting professionals to better serve high-quality development. Qin Rongsheng (2020) made an in-depth study of various application scenarios of artificial

intelligence in accounting, including voice input, certificate verification, intelligent financial risk control, etc., which further reflected the enabling effect of new technologies on accounting practices.

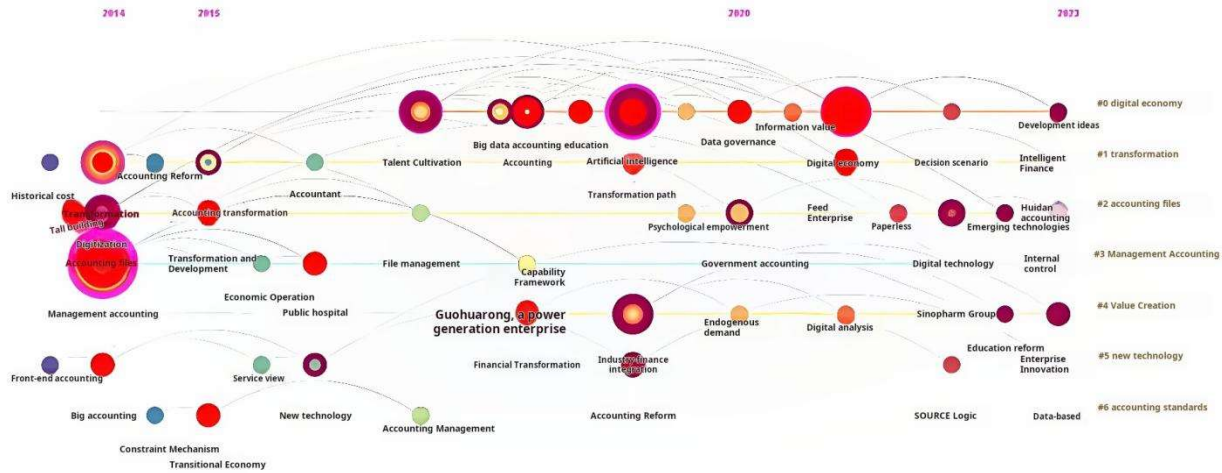


Figure 5. Keywords Time chart

By analyzing the keyword mutation map, researchers can more accurately grasp the research dynamics in the field of accounting, identify potential research gaps, and provide strategic guidance for future research directions. This analysis is not only of great value to academic research, but also has a profound impact on the field of education and practice. Schools can adjust their curriculum accordingly to meet research trends and industry needs, while accounting practitioners can update their professional skills and knowledge system according to the latest research developments in order to remain competitive (Li Aiqin, 2021).

Figure 5 reveals the dynamic evolution of research hotspots in the field of accounting through the keyword timeline, showing the research topics and their evolution paths from 2014 to 2023. Early research focus on "management accounting", "universities" and other traditional topics, gradually evolved to pay more attention to "transformation and development", "value creation" and other strategic topics. The rise of "financial transformation" and "value creation" in 2018 shows the academic community's emphasis on financial management strategies and enterprise value appreciation (Liu Huifeng, 2015; Zhou Chunyan, 2023). Since 2019, the research focus has further shifted to the application direction of emerging technologies such as "artificial intelligence" and "new era", reflecting the far-reaching impact of technological progress on the accounting field (Jin Chunhua, 2022). At the same time, the emergence of key words such as "accounting education" and "intelligent accounting" reveals that education reform and the application of intelligent technology in accounting teaching have become an emerging focus (Jin Qinglu, 2021). Starting from 2020, keywords such as "data governance" and "digital economy" have become new research hotspots, showing the academic community's emphasis on digital management and economic development, as well as the re-examination of traditional accounting functions under the digital background (Yu Bingbing, 2023).

In addition, the importance of topics such as "accounting education" and "accounting theory" is revealed, and with the deepening of digitization, the research is also extended to the adaptation of education systems and policies. The academic community not only focuses on the transformation of accounting functions, but also explores how to train accounting talents to adapt to the needs of new technology and digital economy through educational reform and policy support. On the whole, the combination of keyword timeline and mutation map shows the evolution process of accounting research hotspots from traditional theory to digitalization,

intelligence and policy innovation. The research trend reflects the positive adaptation of accounting discipline to technological change, and provides important theoretical basis and practical guidance for future research direction and educational curriculum.

4. Research Prospect

Based on the quantitative analysis of literature, this paper believes that the future study of accounting transformation will mainly focus on the following three key directions: strategic transformation of accounting function and enterprise value creation, integration of digital technology and accounting practice, and future development of accounting education. Specific analysis is as follows.

4.1. The Strategic Transformation of Accounting Function

Future research needs to delve deeper into how the accounting function supports corporate strategic objectives and value creation through digital transformation. With the continuous development of big data and artificial intelligence technology in the accounting field, intelligent finance has gradually become an important trend in accounting (Zhao Pengfei, 2023). As digital transformation deepens, the accounting function will undergo significant changes to better support strategic objectives and value creation. In the future, the accounting function will not be limited to the traditional financial record and report, but will expand to the direction of forecasting, control and evaluation. The accounting transformation in the new era should not only inherit the traditional financial accounting, but also pay more attention to the development of management accounting. Research should focus on the role of accounting function in providing real-time financial analysis and insight, and how to help enterprises make more rapid and wise decisions (Wang Mingji, 2015). In addition, the accounting function should identify and mitigate potential financial risks through predictive analysis (Xu Jinye, 2022), combine with the sustainable development goals of enterprises, and enhance the social responsibility and reputation of enterprises through ESG reporting (Wang Chaozi, 2018; Wang Aiguo, 2021). In terms of risk management, the accounting function will identify and mitigate potential financial risks through predictive analytics, which is reflected in corporate financial risk prevention research in the context of big data. At the same time, the accounting function will be integrated with the company's sustainable development goals to enhance the company's social responsibility and reputation through ESG reporting. In terms of adaptability to the regulatory environment, the accounting function needs to ensure the compliance and transparency of enterprises, especially with the help of big data technology, monitoring various compliance requirements and ensuring the accuracy and timeliness of financial reporting.

To sum up, the future accounting function will be more dependent on the progress of technology, especially the application of big data and artificial intelligence, in order to achieve more efficient and accurate financial management and decision support, so as to play a more critical role in the operation of enterprises.

4.2. Integration of Digital Technology and Accounting Practice

Future research should deeply analyze the application of artificial intelligence, big data, cloud computing and other technologies in accounting practice, and explore how these technologies can improve the efficiency and quality of accounting work. Intelligent accounting covers multiple levels such as financial sharing integrating business and finance and management accounting based on business intelligence, and gradually forms intelligence covering the whole process of accounting work (Qin Rongsheng, 2021). Intelligent management accounting needs to combine financial analysis and strategic management, integrate intelligent technology into business management, tax management and production and manufacturing of enterprises, and also use big data analysis to reveal the deep mode of enterprise operation (Li Xinxin, 2022).

Research needs to focus on how these emerging technologies affect users of accounting information, including investors, managers and regulators, and how they adapt to these technological changes (Wang Aiguo, 2021). In addition, it is also necessary to explore how to improve the immutability and transparency of financial information through blockchain technology (Zhang Min, 2021). The development and application of these technologies will further promote the transformation of accounting functions, realize the automation and intelligence of accounting work, so as to replace the traditional manual operation process, so that accounting practitioners can turn to more valuable analysis, risk control, forecasting, coordination and other work. The development of intelligent accounting will help the deep integration of material flow, value flow and information flow, break through data barriers, and establish an enterprise holographic information system centered on the integration of industry and finance and financial sharing. With the continuous advancement of technology, financial sharing services will accelerate the development of automation, and routine jobs will be replaced by financial robots and evolve into financial automated factories. The future development of intelligent accounting will be an interdisciplinary field, involving accounting, information technology, data analysis and other aspects, bringing unprecedented changes and opportunities to the accounting profession.

4.3. The Reform of Accounting Education

With the increasing demand for technical skills in the accounting industry, future research needs to deeply explore how accounting education can adapt to this change and promote the comprehensive reform of accounting education. This includes adding programming, data analysis, machine learning and artificial intelligence courses to the curriculum system (Li Kouqing, 2017), and addressing the shortcomings of the current education system through policy guidance and optimization of talent training programs (Ma Ruiyang, 2023). In addition, attention should be paid to cultivating students' innovative thinking and problem-solving ability, and enhancing their technical application ability through practice and simulation experience (Wang Kaitian, 2018). Future accounting education should also make full use of technologies such as virtual reality and augmented reality to create a more immersive learning experience to improve learning results (Tang Dapeng, 2021).

Through the in-depth study of the above three core directions, we can provide deeper insights and suggestions for the future development of the accounting industry. The future of accounting transformation requires not only a focus on the application of technology, but also an exploration of how technology affects all aspects of the accounting profession and how accounting professionals can adapt to these changes to ensure their relevance and value in the digital age (Xu Yude, 2021). In the future, the accounting industry will pay more attention to the unification of international accounting standards, and accountants need to have a global vision and the ability to communicate across cultures. With the development of technology, the role of accountants is also changing, and they need to have more financial analysis and decision support capabilities. Risk management and compliance will become very important matters for businesses, and accounting plays a key role in this. In addition, the emphasis on sustainable development will also be an important issue in the field of accounting, accounting personnel need to pay attention to the environmental and social impact of enterprises, through financial reporting and analysis, to provide support and advice for the sustainable development of enterprises.

To sum up, the future development of the accounting industry will be more and more closely integrated with science and technology, and accounting personnel need to constantly improve their professional quality and adaptability to cope with the challenges and opportunities of future development. The reform of accounting education will be an interdisciplinary field,

involving accounting, information technology, data analysis and other aspects, bringing unprecedented changes and opportunities to the accounting profession.

5. Conclusion

This study is based on 207 literatures collected by CNKI, and uses CiteSpace knowledge graph tool to carry out systematic bibliometric analysis in the field of accounting transformation. The results show that the research focus in the field of accounting transformation is mainly on the strategic transformation of accounting function, the integration of digital technology and accounting practice, and the future direction of accounting education.

First, the strategic transformation of the accounting function is reflected in the shift from the traditional record-keeping and reporting role to a more focused role on strategic decision support and value management. This transformation not only emphasizes the central role of accounting in corporate strategic planning, but also highlights its contribution in the process of value creation (Wang Aiguo, 2023). Second, the convergence of digital technology and accounting practices is reshaping every aspect of accounting work. The application of artificial intelligence, big data, cloud computing and other technologies has significantly improved the efficiency and quality of accounting work, while enhancing the transparency of financial reports and the ability to provide decision support for enterprise management (Wang Aiguo, 2020). Finally, the future direction of accounting education focuses on how to adapt to the rapid changes in the industry, emphasizing the cultivation of students' technical skills and innovative thinking to cope with the demand for accounting talents in the digital age (CAI Xianjun, 2022).

The research results also show that the number of literature in the field of accounting transformation shows a steady growth trend, reflecting the academic circle's high attention to the transformation of accounting functions and its digital development. Future research trends will pay more attention to how the accounting function provides deep insight and prediction for enterprises through technological innovation, and at the same time adopt an interdisciplinary approach to integrate the theory and practice of accounting, information technology, management and other disciplines (Lu Xiaojun, 2020). In addition, the future of accounting education will continue to explore how to use advanced technology to improve the interactive and practical education, in order to cultivate accounting talents who can adapt to the needs of the digital age.

This study provides a systematic insight into the field of accounting transformation, points out the direction of future research, and provides theoretical support for accounting practice. As technology advances and the global economic environment changes, the accounting profession needs to constantly adapt and innovate to maintain its critical role in modern society. The study of accounting transformation will pay more attention to the combination of theory and practice, adopt interdisciplinary methods, integrate the theory and practice in many fields, so as to build a more comprehensive and in-depth theoretical framework. At the same time, accounting education will also be reformed with technical support, focusing on improving interaction and practicality, and conveying high-quality talents for the accounting industry to meet the needs of the new era. These trends indicate that future accounting transformation research will pay more attention to the integration of theoretical innovation and practice to cope with the continuous changes and new challenges of the industry.

References

- [1] Qi Yongxin. Thinking on the transition from financial Accounting to management Accounting under the background of Big Data [J]. Finance and Accounting Research,2019,(04):29-32.
- [2] Zhang Ling, Cui Yongli. Review of domestic research on accounting reform and development under the "Internet +" environment [J]. Friends of Accounting,2017,(07):116-118.

- [3] Wang Aiguo. CFO should control Three major problems in the development of intelligent accounting [J]. Friends of Accounting, 2021, (13): 11-15.
- [4] Shi Qiuxia. Research on Digital Transformation of Management Accounting driven by RPA Robot [J]. Finance and Accounting Research, 2023, (04): 53-57.
- [5] Xu Hui. Construction of College Students' Core Literacy System from the professional perspective - Enlightenment from International Accounting Education Standards [J]. Journal of Educational Research, 2020, (10): 46-51.
- [6] hang Lin, Ding Xin. Research on Accounting theory and Practice Innovation in China under the background of Comprehensively Deepening reform: An overview of the views of the 2015 Academic Annual Meeting of the Accounting Society of China [J]. Finance and Accounting, 2015, (17): 73-75.
- [7] Xu Jingchang. The impact of artificial Intelligence and Big Data on the development of accounting discipline [J]. China University Teaching and Learning, 2019, (09): 39-44.
- [8] Wang Shijie, Liu Feng. The influence of large language model on the future development of accounting [J]. Financial Research, 2023, (04): 40-49.
- [9] Xu Jinye, Wang Menglin. Theory and method of management accounting applied in large-scale equipment investment decision [J]. Finance and Accounting, 2015, (21): 67-69.
- [10] Zhang Gexing. Rethinking on giving play to the "leading" role of accounting leaders and innovative training mode in accounting transition period [J]. Finance and Accounting, 2017, (10): 6-8.
- [11] Lai Yongtian, Liu Guangqiang, Wang Jingting. Some thoughts on the revision of "Accounting Law" [J]. Finance and Accounting Communication, 2021, (21): 3-6.
- [12] Sun Fangcheng, Huang Hui, Jiang Shuiquan. Accounting transformation and Economic Development: Opportunities and Challenges: An overview of the 24th Annual Conference of Higher Engineering Colleges of Accounting Society of China [J]. Accounting Research, 2018, (03): 94-96.
- [13] Pan Songjian, Zheng Qizheng, Xia Taifeng, et al. Research on the Transformation of Accounting Talent Demand and the precise transformation of Talent Training in the Intelligent Era: Based on the survey of enterprises' expectation and reality of accounting talent [J]. Finance and Accounting Research, 2023, (11): 41-49.]
- [14] Xu Guanghua, Shen Yi, Deng Deqiang. Change and Innovation of Management Accounting under the changing environment -- Summary of the 2015 Academic Annual Meeting of Management Accounting Professional Committee of Chinese Accounting Society and the first China Management Accounting High-level Forum [J]. Accounting Research, 2015, (12): 87-89.
- [15] Dong Muxin. Financial and accounting supervision mechanism innovation and framework analysis: Based on intelligent accounting perspective [J]. Financial Science, 2022, (07): 90-96.
- [16] Yang Liang. Tomorrow of Accounting -- Talking about accounting transformation [J]. Finance and Accounting, 2017, (06): 16-17.
- [17] Liu Shangxi, Zhao Jinsong. Research on the internal mechanism of accounting digitalization promoting enterprise innovation [J]. Guizhou Social Sciences, 2023, (06): 107-116.
- [18] SUN Hongliang, Xu Yang, WANG Jian. The basic framework and application of accounting agent construction [J]. Finance and Accounting, 2023, (12): 49-51.
- [19] Xu Jinye. Accounting Professional judgment: Identification and research focus of financial accounting intelligent robot [J]. Financial Research, 2023, (01): 36-44.
- [20] Xu Huihong, Yang Zhounan, Zhou Weihua, et al. Research on Intelligent Accounting System based on Management activity Theory -- from accounting Informatization to accounting Intelligentization [J]. Accounting Research, 2021, (03): 11-27.]
- [21] Xu Huihong, Yang Zhounan, Dong Muxin. Research on macro-mechanism of intelligent accounting based on activity theory of accounting management [J]. Journal of Beijing Technology and Business University (Social Sciences Edition), 2022, 37(05): 48-58. (in Chinese)
- [22] Li Hui, Wen Subin. Comparison of material connection: Comparison of training programs for intelligent accounting talents [J]. Finance and Accounting Monthly, 2023, 44(04): 45-50. (in Chinese)

- [23] Zuo Yan, Li Jie. Research on accounting education reform in higher vocational colleges [J]. Shandong Social Sciences,2016,(S1):376-377.
- [24] He Chuantian, Liu Zhonghua, Chang Liang. Construction of high-quality international accounting talents training system: Concept and Practice -- Summary of the 2013 Annual Meeting of Accounting Education Committee of Chinese Accounting Society and the 6th Dean's Forum of Accounting Schools [J]. Accounting Research,2014,(01):91-93.
- [25] Zhang Junrui, Wang Yongyan. Vigorous and Resolute: Lessons Learned from MPAcc Talent Cultivation and Prospects for Future Trends [J]. Finance and Accounting Monthly, 2022, (04): 23-33.
- [26] Xu Yi. Reform and Innovation of the Training Model of Accounting Talents in the Era of Big Data -- Review of the Reform and Innovation of Accounting Education and Teaching [J]. Educational Development Research,2020,40(05):88.
- [27] Luan Fugui. Expansion of the connotation of accounting education -- Thinking based on life education [J]. Accounting Research,2017,(12):87-92+97.
- [28] Wang Yongde, Dong Shulan, Zhang Guofu. Accounting Education in China: Concept, Reform and Practice: Summary of the 2015 Annual Meeting of the Accounting Education Professional Committee of the Accounting Society of China and the 8th Dean's Forum of Accounting Schools [J]. Accounting Research,2015,(11):93-95.
- [29] Liu Yue, Huang Li, Yang Dan. The deconstruction and training of accountants' competence: An Exploration based on international accounting education standards [J]. Accounting Research,2014, (05):29-36+94.]
- [30] Deng Deqiang, Wen Subin, Zhao Yiyi, et al. Can Accounting Practice Improve professional moral reasoning ability of Accounting students? [J]. Accounting Research,2018,(08):87-94.]
- [31] Wu Aili, Wang Kaitian. A preliminary study on accounting spirit business education in our country [J]. Accounting Research,2014,(10):89-95+97.
- [32] Li Mingjuan. Research on accounting undergraduate teaching reform based on the difference between supply and demand of vocational ability [J]. Heilongjiang Higher Education Research,2015,(10):170-172.
- [33] Pan Shangyong. On the transformation, upgrading and future development of accounting under new technology [J]. Friends of Accounting,2016,(23):18-20.
- [34] Wen Subin, Li Hui, Sun Ting. Review: Knowledge graph analysis of domestic intelligent accounting research [J]. Finance and Accounting Monthly,2022,(23):65-72.
- [35] Wen Subin, Wen Haoran, Zhang Xingliang, et al.
- [36] Qin Rongsheng. Research on application of Artificial Intelligence and Intelligent Accounting [J]. Friends of Accounting,2020,(18):11-13.
- [37] Li Aiqin, Qin Junling, Hao Fengqin. History, achievements and Enlightenment of accounting Education Development in Tibet in the 70 years of Peaceful Liberation [J]. Journal of Tibet University for Nationalities (Philosophy and Social Sciences Edition), 2019,42(03):14-19+153.
- [38] Liu Huifeng, Jiang Suyu. Review of accounting education research literature in China -- based on comparative research perspective [J]. Accounting Research,2015,(06):80-86+97.
- [39] Zhou Chunyan. Research on accounting transformation path of feed enterprises under the background of digitalization [J]. China Feed,2023,(23):164-167.
- [40] Jin Chunhua, Lv Xiaomin, Wang Hui. Construction and practice of intelligent accounting professional talent training system: Based on the investigation and analysis of 336 universities in China [J]. Chinese University Education,2022,(11):17-22+71.
- [41] JIN Qinglu, Zhu Kai, Zeng Qingsheng. Exploration and practice of "financial model" of finance and accounting talents training in the age of numerical intelligence [J]. Chinese University Teaching and Learning,2021,(11):28-34+45.
- [42] Yu Bingbing, Zhang Min. Discussion on the construction of intelligent accounting training platform [J]. Financial Journal,2023,44(19):64-70. (in Chinese)

- [43] Zhao Pengfei. The future of Accounting and the future of Accounting [J]. Friends of Accounting, 2023,(05):68-71.
- [44] Wang Mingji, Zhang Xinyuan. The direction and path selection of accounting transformation under the background of new era [J]. Friends of Accounting, 2019,(15):6-10.
- [45] Xu Jinye. Theoretical basis of Intelligent Accounting: The Development of "Accounting Information System Theory" -- Commemorating the 100th anniversary of Professor Yu Xuying's birth [J]. Financial Research, 2022,(01):38-48.]
- [46] Wang Chaozi, Chen Shuangming. Practice and thinking of financial transformation of state-owned power generation enterprises in the new era [J]. Friends of Accounting, 2018,(15):72-74.
- [47] Dong Nanyan, Zhang Junrui, Su Yang. Concept framework, training mode and quality improvement of international accounting talents in our country [J]. Accounting Research, 2020,(01):38-48.
- [48] Qin Rongsheng. Digital transformation and intelligent accounting construction [J]. Finance and Accounting, 2021,(22):4-6.
- [49] Li Xinxin. Analysis of intelligent transformation path of feed enterprise finance in Digital economy era [J]. China Feed, 2022,(08):129-132.
- [50] Wang Aiguo. CFO should control three major problems in the development of intelligent accounting [J]. Friends of Accounting, 2021,(13):11-15.
- [51] Zhang Min, Wang Yinping, Li Ang. Project-based learning method for business students in the context of new liberal arts: A case study of Intelligent accounting major [J]. Finance and Accounting Monthly, 2021,(23):63-67.
- [52] Li Kouqing. Shanghai National Assembly: Multiple measures to cultivate talents to support accounting transformation and upgrading [J]. Finance and Accounting, 2017,(04):13-14.
- [53] Ma Ruiyang. Development path of digital accounting education [J]. Journal of Shanxi University of Finance and Economics, 2023,45(S1):169-171.
- [54] Wang Kaitian, Hu Xiaoming. Training high-quality accounting talents by combining business education with knowledge [J]. China Higher Education, 2018,(06):36-37.
- [55] TANG Dapeng, Yang Zhenzhen, Li Yuan, et al. Supply-side Structural Reform of Accounting Education Resources under the transformation of data intelligence: An overview of the 2021 Annual Meeting of Accounting Education Professional Committee of Chinese Accounting Society and the 14th Dean (Department Chair) Forum of Accounting School [J]. Accounting Research, 2022, (01):190-192.]
- [56] XU Yude, Liu Di, Fan Kesin. Accounting education transformation and career development planning in the era of digital economy [J]. Financial Science, 2021,(12):27-36.
- [57] Zhang Min, Wang Yinping, Li Ang. Intelligent Accounting (Finance) professional training program: a framework construction -- Based on AACSB certification perspective [J]. Chinese University Teaching and Learning, 2021,(06):25-33.
- [58] Wang Aiguo. Research on Basic problems of intelligent accounting [J]. Finance and Accounting Monthly, 2023,44(24):62-67. (in Chinese)
- [59] Wang Aiguo. Intelligent accounting: the development direction of accounting transformation [J]. Friends of Accounting, 2020,(09):2-5.
- [60] CAI Xian-Jun, Chen Qing-Rong, Wen Su-Bin, et al. Reform and practice of training intelligent accounting Talents under the background of new liberal arts: A case study of Nanjing Audit University [J]. Friends of Accounting, 2022,(03):135-140.
- [61] Lu Xiaojun, Yang Ying. Discussion on the strategic path of management accounting transformation under the integration of industry and finance -- Based on the case study of Mengniu Group [J]. Journal of Finance and Accounting, 2020,(11):166-171.