

# Innovation Path of Standardization of Service Trade Under the Background of Digitalization

Hanqi Yue, Siqu Huang

*Business Administration, Sejong University, Gwangjin-gu, Seoul, Korea*

**Abstract:** This paper aims to explore the innovative path of service trade standardization under the background of digitalization. With the advent of the digital age, the field of service trade is facing new opportunities and challenges. As an important means to promote service trade innovation, standardization is of great significance to improve service quality, reduce transaction costs and promote international competitiveness. Based on the research results of references, this paper discusses the standardization innovation path of service trade in different fields under the background of digitalization. Taking Hainan's path to enhance the international competitiveness of service trade under the background of free trade zone construction as an example, this paper analyzes the importance and influencing factors of standardization innovation of service trade under the background of digitalization. Secondly, taking the digital transformation path of banks and investment banks, the innovation path of human resource management in institutions and institutions, and the formation path of digital innovation in enterprises as case studies, the paper discusses the specific path selection and implementation strategy of standardization innovation of service trade under the background of digitalization. Further, taking the research on the innovative development path of China's service trade under the RCEP framework and the innovation effect of digital service trade opening as an example, this paper analyzes the impact of standardization innovation path of service trade on international competitiveness and enterprise innovation. This paper explores the practice path and strategy of standardization innovation in service trade under the background of digitalization. The research results show that the standardization

innovation of trade in services under the digital background needs to make full use of digital technology, strengthen cooperation among all parties, formulate unified standards and norms, and improve service quality and efficiency.

**Key words:** Digital Background; Trade in Services; Standardization; Innovation Path; International Competitiveness; Enterprise Innovation

## 1. Introduction

### 1.1 Research Background

In the era of digitalization, the global service trade is undergoing a transformation driven by technological advancements. The widespread application of digital technologies, such as artificial intelligence, blockchain, and big data, has significantly impacted various aspects of service trade, including the delivery of services, customer engagement, and market expansion. These digital technologies have the potential to revolutionize the way services are standardized, creating new opportunities for innovation and development in the field of service trade.

However, the digitalization background also presents challenges in standardizing service trade. Traditional approaches to service trade standardization, which heavily rely on manual processes and paper-based documentation, are no longer sufficient to meet the demands of the digital era. The dynamic nature of digital services, the complexity of cross-border transactions, and the need for secure and reliable data exchange call for new innovative pathways to standardize service trade.

To address these challenges and explore innovative pathways for standardizing service trade in the digitalization background, a comprehensive analysis of existing research achievements is necessary. Scholars have already made significant contributions in this area. For example, Yang Lin and Shen Chunlei

(2020) proposed pathways to enhance the international competitiveness of service trade in Hainan by leveraging the opportunities presented by the construction of free trade zones. Zhang He and Qin Chong (2020) focused on the digital transformation pathways of banking investment banks in China, specifically exploring the innovative application of consumer finance asset securitization under the context of big data. Yao Rui and Liu Xiao (2023) investigated innovative pathways for human resource management in government institutions, recognizing the need for digitalization in this sector. Zhu Lingying, Wang Liwen, and Zhang Ying (2023) studied the pathways for innovative development of service trade in China within the framework of the Regional Comprehensive Economic Partnership (RCEP). Fang Hui and Huo Qixin (2023) examined the effects of opening up digital service trade on enterprise innovation, highlighting the importance of embracing digitalization in service trade. Chen Xiumei (2023) explored pathways for digital innovation in enterprises, recognizing the potential of the digital economy. Wang Lai and Yang Feifei (2023) analyzed the pathways for the inheritance and innovative development of Jinling folding fans in the context of digitalization, demonstrating how traditional industries can adapt to the digital era. Zhang Hongyu (2023) explored the pathways for the innovation and practice of modern services in the Hainan Free Trade Port, addressing the unique challenges and opportunities in this region.[1-9]

Drawing from these research achievements and insights, this study aims to provide a comprehensive analysis of the innovative pathways for standardizing service trade in the digitalization background. By thoroughly examining the existing research, this study will identify gaps, trends, and opportunities in the field. By integrating theoretical analysis with practical insights, this study will propose innovative pathways that can enhance the standardization of service trade in the digital era.

The findings of this study will have both theoretical and practical implications. Theoretical contributions will include advancing our understanding of the challenges and opportunities in standardizing service trade in the digitalization background. Moreover,

this study will provide theoretical guidance for policymakers, researchers, and practitioners in formulating strategies to improve the level of service trade standardization. Practical implications will include offering practical recommendations for businesses and governments to adopt innovative approaches in standardizing service trade. By embracing digital technologies, leveraging international collaborations, and developing supportive policies, service trade can thrive in the digital era, contributing to the growth of the global economy.

This study aims to comprehensively analyze existing research achievements and explore innovative pathways for standardizing service trade in the digitalization background. By building upon the insights from previous studies, this research will provide theoretical guidance and practical references for improving the level of service trade standardization and promoting the development of service trade in the digital era. By embracing innovation and leveraging the opportunities presented by digital technologies, service trade can adapt and thrive in the ever-evolving global marketplace.

## 1.2 Research Objectives and Significance

The objectives of this study are to investigate the innovative pathways for standardizing service trade in the digitalization background and analyze the existing theoretical and practical research achievements. The specific objectives include:

Analyzing the issues and challenges of standardizing service trade in the digitalization background: This objective aims to identify the specific challenges faced in standardizing service trade in the digital era. It will explore issues such as data security, cross-border regulations, and the integration of emerging technologies in service trade.

Exploring innovative pathways for standardizing service trade in the digitalization background: This objective aims to identify and analyze the different innovative pathways that can be adopted to enhance service trade standardization in the context of digitalization. It will examine the application of technologies such as artificial intelligence, blockchain, and big data, as well as the role of policy innovation and international cooperation.

Analyzing relevant case studies to understand

the application and effects of different innovative pathways: This objective aims to examine real-world examples and case studies of organizations or countries that have implemented innovative pathways for service trade standardization in the digital era. By analyzing these cases, the study can gain insights into the practical application and effectiveness of different innovative approaches.

Providing suggestions and prospects for future innovations in service trade standardization: This objective aims to provide practical recommendations and prospects for future innovations in service trade standardization. It will draw upon the findings and analysis of the previous objectives to suggest strategies and directions for policymakers, businesses, and researchers to further enhance the standardization of service trade in the digital era.

This study holds important theoretical and practical significance for enhancing the level of service trade standardization and promoting the development of service trade in the digital era. By conducting in-depth research on innovative pathways for service trade standardization in the digitalization background, feasible suggestions and strategic planning can be provided to government and business decision-makers, facilitating innovation and development in service trade. The study will contribute to improving the efficiency, transparency, and trustworthiness of service trade, thereby promoting economic growth and global integration.

Furthermore, this study can contribute new perspectives and research directions to the academic community, broadening the depth and breadth of academic research. By analyzing and synthesizing existing theoretical and practical research achievements, the study will build upon the knowledge base in the field of service trade standardization in the digital era. It can serve as a reference for future studies and stimulate further discussions and collaborations among researchers, fostering continuous advancements in the field.

Overall, this research aims to provide valuable insights and practical recommendations for policymakers, businesses, and researchers involved in service trade standardization. By exploring innovative pathways and addressing the challenges of the digitalization background,

this study seeks to contribute to the sustainable development of service trade in the digital era.

## **2. Methodology**

### **2.1 Selection and Overview of Research Method**

This study adopts a literature review method to summarize and analyze relevant literature, thereby synthesizing and summarizing existing research findings. Firstly, we will analyze and examine the problems and challenges of standardizing service trade in the context of digitalization. Secondly, we will integrate and compare existing theoretical frameworks of innovative pathways to identify commonalities and differences. Lastly, through case analysis, we will conduct in-depth research on the application and effectiveness of different innovative pathways to validate their feasibility and efficacy.

### **2.2 Data Collection and Processing**

Data collection primarily relies on the literature review method. We will extensively gather relevant literature, including academic journals, conference papers, and research reports, regarding innovative pathways for standardizing service trade in the context of digitalization. During the literature collection process, we will conduct searches using keywords and renowned authors in the related field, selecting literature closely related to the research topic. Additionally, we will reference classic theoretical articles and relevant policy documents to ensure the comprehensiveness and reliability of the research.

Data processing primarily entails literature screening, organization, and summarization. Initially, we will conduct preliminary screening of the collected literature, excluding irrelevant or low-quality sources. Subsequently, we will carefully read and organize the selected literature, extracting important information and research findings. Finally, we will summarize and synthesize the extracted information to present the characteristics and applications of different innovative pathways.

Throughout the data processing stage, we will prioritize the protection of data privacy and confidentiality, strictly adhering to research ethics standards. Moreover, we will ensure the accuracy and reliability of the data, avoiding the inclusion of false or inaccurate information.

Through data collection and processing, we will gain a comprehensive understanding of the current research status and development trends of innovative pathways for standardizing service trade in the context of digitalization, providing substantial support for the formulation of research conclusions.

### **3. Innovative Pathways for Standardizing Service Trade in the Digital Era**

#### **3.1 Analysis of Existing Issues in Standardizing Service Trade in the Digital Era**

Standardizing service trade faces numerous challenges and issues in the digital era. Firstly, traditional standardization models no longer meet the demands of digital development. The rapid advancement of digital technologies has brought about new business models and processes, necessitating adaptable standardization to facilitate the development of digital service trade. Secondly, service trade in the digital era is characterized by cross-border and complexity, with variations in standards and inconsistent certification systems becoming limiting factors. Additionally, information security and data protection pose new requirements for service trade standardization. In the digital environment, data privacy and security are major concerns, making safeguarding data integrity and privacy crucial considerations. Moreover, the rapid development of digital technologies has led to service trade innovations such as cloud computing, the Internet of Things, and artificial intelligence, requiring continuous innovation and upgrading of service trade standardization.

#### **3.2 Construction of Innovative Pathways and Theoretical Foundations**

Building innovative pathways is key to driving the standardization of service trade in the digital era. Firstly, the construction of an innovative system is necessary to foster the generation and application of standardization innovations. This system encompasses policy innovation, technological innovation, standardization innovation, and institutional innovation. In terms of policy innovation, it is essential to formulate and improve relevant policies that provide a conducive environment and support measures for the development of

digital service trade standardization. Regarding technological innovation, ongoing exploration and application of new digital technologies such as blockchain, artificial intelligence, and big data are crucial to enhancing the efficiency and quality of service trade. In terms of standardization innovation, research and formulation of standards suited to the digital era and the establishment of a unified standard certification system are necessary to reduce standard variations and certification costs. Institutional innovation involves building management and regulatory systems for service trade that are adaptable to the digital era, reinforcing information security and data protection, and providing effective dispute resolution mechanisms.

Secondly, strengthening international cooperation and communication is vital to establishing mechanisms for cross-border service trade standardization collaboration. In the digital era, service trade no longer remains confined to domestic markets; rather, it possesses cross-border and globalization characteristics. Hence, nations should enhance cooperation and jointly develop and promote cross-border service trade standardization. This can be achieved through international organizations and multilateral mechanisms, where experiences and best practices can be shared to facilitate standard recognition and integration. Strengthening cooperation with enterprises and industry organizations can also harness the intellectual and resource capabilities of market participants, facilitating innovation and application of standardization. Furthermore, emphasis must be placed on talent cultivation and technological research and development to provide robust support for service trade standardization innovation. In the digital era, talent and technological cultivation are crucial drivers of service trade standardization innovation. It is necessary to bolster talent training efforts to nurture professionals equipped with the requirements of digital service trade standardization. Simultaneously, increased investment in technological research and development is essential to driving the application and innovation of digital technologies in service trade standardization. Establishing dedicated research institutions and laboratories, organizing relevant research projects and initiatives, and elevating the level of research

and application in service trade standardization are imperative.

Theoretical foundations can be drawn upon and applied, such as innovation chain theory, innovation network theory, and innovation ecosystem theory. Innovation chain theory emphasizes the synergy and integration of innovation activities and value chains, offering insights into the construction of innovative pathways for service trade standardization. Innovation network theory underscores the networked and collaborative nature of innovation activities, applicable to the establishment of collaborative mechanisms for cross-border service trade standardization. Innovation ecosystem theory highlights the diversity and openness of innovation activities, fitting for the construction of an innovative system for service trade standardization in the digital era.

Constructing innovative pathways for standardizing service trade in the digital era necessitates comprehensive consideration of factors such as policy, technology, standards, and institutions. Strengthening international cooperation and communication, prioritizing talent cultivation and technological research and development, and drawing upon existing innovation theories can facilitate the innovation and development of service trade standardization in the digital era. This will provide robust support for service trade in the digital age, driving the prosperity and development of global service trade.

## 4 Process

### 4.1 Practical case analysis of technological innovation on service trade standardization

Technological innovation plays an important role in service trade standardization. This section will analyze the application of two key technologies, artificial intelligence and blockchain, in the standardization of digital service trade through practical cases.

#### 4.1.1 Application of artificial intelligence technology in the standardization of cross-border service trade

Artificial Intelligence (AI) technology plays an important role in standardizing cross-border trade in services. Through technologies such as natural language processing and machine learning, AI is able to process and analyze

large amounts of cross-border service trade data to provide comprehensive and accurate information support. For example, artificial intelligence can help formulate standardized guidance documents and industry norms through intelligent classification and induction methods, and improve the standardization level of cross-border service trade. In addition, artificial intelligence can also automate inspection and certification processes, reduce certification time and cost, and improve the efficiency and feasibility of standardization.

#### 4.1.2 The practice of blockchain technology in the standardization of digital service trade

The application of blockchain technology in the standardization of digital service trade has also attracted much attention. Blockchain technology enables the secure transmission and exchange of service trade information through decentralized distributed ledgers and smart contracts. Through blockchain technology, various participants in cross-border service trade can achieve information sharing and verification, reducing information asymmetry and trust issues. At the same time, blockchain technology can also establish a traceable service trade data chain, ensure the authenticity and integrity of data, and improve the credibility and transparency of service trade standardization.

## 4.2 Practical case analysis of economic policy innovation on service trade standardization

Economic policy innovation also has an important impact on the standardization of trade in services. This section will analyze the role of government support policies and public sector participation in the standardization of digital services trade through practical cases.

### 4.2.1 Impact of government support policies on standardization of digital service trade

Government support policies have a positive impact on the standardization of digital service trade. the government can formulate relevant policies to encourage enterprises to adopt uniform standards in digital service trade, and provide corresponding policy measures such as financial support and tax incentives. For example, the government could set up a research fund for standardisation of trade in

digital services to finance related research and standard-setting. In addition, the government can also establish a regulatory body for the standardization of digital service trade, strengthen the supervision and evaluation of the implementation of standards, and promote the full implementation of the standardization of digital service trade.

#### **4.2.2 Sharing of experience in standardization of trade in services involving the public sector**

The participation and experience sharing of the public sector in the standardization of trade in services is of great significance in promoting standardization. The public sector can lead and organize the relevant standard-setting work, and promote the fairness and authority of standard-setting. At the same time, the public sector can also strengthen the publicity and promotion of the standardization of trade in services, and improve the standardization awareness and participation of market players. In addition, the public sector can also establish a cooperation mechanism with enterprises and industry organizations to jointly study and solve problems and challenges in standardization, and promote the development and upgrading of service trade standardization.

### **4.3 Case study of international Cooperation and coordination on standardization of trade in services**

International cooperation and coordination play an important role in the standardization of trade in services. This section will analyze the role and contribution of transnational organizations in the standardization of trade in services and summarize the cases and experiences of transnational cooperation through practical cases.

#### **4.3.1 Role and contribution of transnational organizations in standardization of trade in services**

Transnational organizations play an important role and contribution in the standardization of trade in services. These organizations can coordinate the differences in standards between countries and promote the harmonization and harmonization of standards. For example, organizations such as the International Organization for Standardization (ISO) and the International Telecommunication

Union (ITU) have promoted the global integration of standardization of trade in services by developing international standards. At the same time, transnational organizations can also provide relevant training and consulting services to help countries improve standards and capabilities.

#### **4.3.2 Transnational cooperation cases and experience summary**

The cases and experiences of transnational cooperation in service trade standardization are also of great value. Cooperation between different countries and regions can promote the exchange of experience and the sharing of resources, and promote the innovation and application of standardization. For example, the Asia-Pacific Economic Cooperation (APEC) has promoted the coordination and integration of the standardization of trade in digital services through multilateral cooperation mechanisms. In addition, the practice of some international cooperation projects and project organizations has also provided valuable experience and inspiration for the standardization of trade in services.

On the basis of the above case analysis, it can be concluded that technological innovation, economic policy innovation and international cooperation and coordination play an important role and influence on the standardization of trade in services. These practice cases not only provide strong support for the innovation path of service trade standardization under the background of digitalization, but also provide reference for the practice and application of other countries and regions in the field of service trade standardization. Further strengthening technology research and development, improving economic policies and strengthening international cooperation will help promote the innovation and development of service trade standardization, and provide more stable and efficient rules and guarantees for service trade in the digital era.

## **5. Conclusion**

### **5.1 Summary of Key Research Findings**

Through the research and analysis of the innovative pathways for standardizing service trade in the digital era, the following key research findings have been summarized:

Firstly, technological innovation plays a crucial role in service trade standardization. The application of technologies such as artificial intelligence (AI) and blockchain can enhance the efficiency and credibility of standardization, promoting the development and application of digital service trade.

Secondly, economic policy innovation has a significant impact on service trade standardization. Government support policies and the involvement of the public sector provide policy support and oversight, fostering the implementation and coordination of standardization.

Thirdly, international cooperation and coordination are vital in driving service trade standardization. Multinational organizations play a key role in standard-setting and coordination, while case studies and lessons learned from cross-border cooperation provide valuable insights for service trade standardization.

## 5.2 Prospects for Future Innovation in Service Trade Standardization

For future innovation in service trade standardization, the following prospects can be outlined:

Firstly, continuous enhancement of technological innovation is key to achieving innovation in service trade standardization. With the ongoing development of technology, emerging technologies such as the Internet of Things, big data, and cloud computing hold great potential for service trade standardization. Therefore, research and application of these emerging technologies should be strengthened to facilitate deep integration between service trade standardization and technological innovation.

Secondly, strengthening economic policy innovation is essential to ensuring innovation in service trade standardization. Governments should continue to improve the policy environment, providing favorable policies and financial support for the development of service trade standardization. Meanwhile, the public sector should strengthen the supervision and evaluation of standardization, promoting its implementation and coordination, and providing a favorable policy environment and institutional guarantee for service trade standardization.

Thirdly, enhancing international cooperation

and coordination is a crucial approach to achieve innovation in service trade standardization. International organizations and cross-border cooperation mechanisms should further enhance collaboration, sharing experiences and best practices, and promote global integration of service trade standardization. Additionally, establishing more flexible and efficient cooperation mechanisms, strengthening the development and coordination of international standards, and driving the global integration of service trade standardization.

Lastly, fostering talent development and raising awareness are fundamental to achieving innovation in service trade standardization. Efforts should be made to cultivate professionals with specialized knowledge and skills in service trade standardization and raise awareness and participation in standardization. Moreover, public education and awareness campaigns should be strengthened to enhance public and business understanding of service trade standardization, increasing its importance and impact.

In conclusion, through efforts in technological innovation, economic policy innovation, international cooperation and coordination, as well as talent development and awareness raising, the innovation and development of service trade standardization in the digital era can be promoted. This will provide a solid foundation and effective support for the prosperity of service trade and sustainable global economic development.

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