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A literature review on accounting higher education institute performance in China: The role of AI and technology readiness

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Abstract

This research offers a systematic and comprehensive literature review analyzing current studies on the performance of higher education institutes in China through the incorporation of technological advancements. This systematic literature review method involves 34 peer-reviewed articles published in reputable academic journals between 2012 and July 2023. This study is confined to a review of empirical papers derived from digital databases encompassing the terms "artificial intelligence or innovation or technological advancement in higher education institutes in China" in the titles. This study proposes a framework to assess the performance of higher education institutes. Further, artificial intelligence is proposed as a mediator, and technology readiness is proposed as a moderator. Significant literature gaps indicate that this field is a relatively novel phenomenon. Thus, rigorous research on the topic proves necessary to develop a holistic understanding of the subject area. This study expands the current body of knowledge by providing the first comprehensive systematic review of the performance of higher education institutes and recommending future research agendas.

Keywords: Artificial intelligence readiness, higher education institutions, innovative characteristics, technology readiness.

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1. Introduction

China's higher education system has evolved in response to the digital age and shifting student and societal demands [1]. The operational efficiency and effectiveness of HEIs in today's fast-paced environment rely on the institution's ability to innovate [2]. Chinese higher education institutions (HEIs) need to learn how innovation characteristics affect HEI performance to maintain their competitive edge and relevance [3].

This study systematically examines the hypothesized connection between scholarly innovation and the performance of China's Higher Education Institutions (HEIs), emphasizing the vital role of accounting practices in enhancing their

competitive edge and relevance [3]. Accounting practices are crucial for HEIs to understand how innovation characteristics impact their overall performance. Further, AI (Artifical Intelligence) readiness is a key factor in how effectively schools incorporate innovation into their curricula [4]. When discussing the readiness of a higher education institution to adopt and implement new technologies in the realm of accounting studies, the focus is on its technological readiness. Higher education (HE) can potentially revolutionize accounting education if it adopts the characteristics of an innovative institution. Online accounting education, intelligent tutoring, and computer-generated grades are just a few examples [5]. Due to the rapid development of technology, there are now more options for tailoring instruction for accountants and increasing the efficiency of educational institutions.

This systematic review aims to determine how innovation characteristics affect the performance of higher education institutions (HEIs) by analyzing relevant literature, research articles, and empirical evidence. In this overview, artificial intelligence readiness seems as a connecting link between innovation factors and institutional results. Higher education institutions (HEIs) can learn about the opportunities and challenges of implementing AI-driven tools by examining the effect of AI-readiness on the efficient adoption of cutting-edge technologies [6]. This study also analyses technological preparedness's role in influencing the relationship between innovation traits and HEI effectiveness. Higher education institutions (HEIs) that are technologically ready to provide education about accounting have the technical infrastructure, resources, and capabilities necessary to adopt and effectively utilize emerging technologies [7]. Higher education institutions (HEIs) can learn the conditions for successful technological implementation to teach accounting by assessing their technological readiness level and the effectiveness of integrating innovations [8]. The rapid development of technology in China and the country's emphasis on educational innovation motivate this analysis [9]. The study focuses on China because to its rapid technological advancement, strong focus on educational innovation, and major higher education sector growth and transformation. This provides a context for examining higher education innovation and accounting practices [10]. To better understand accounting education in the digital age, this systematic review examines the impact of innovation characteristics on the performance of Chinese Higher Education Institutions (HEIs). Leaders, administrators, and policymakers in China's higher education system will find this review invaluable to enhance the accounting education. To boost the efficiency of institutions, these parties must adopt new technologies and approaches. To help higher education institutions (HEIs), this review provides evidence-based insights into AI readiness and technology readiness. High-performing universities should encourage creativity and flexibility.

The purpose of this meta-analysis is to learn more about the effects of innovation on Chinese higher education institutions (HEIs). This article examines what makes a difference when it comes to implementing cutting-edge technology in universities providing accounting education. Our goal is to comprehensively study the state of AI readiness, technological readiness, and innovative traits. This study aims to identify the factors that affect the widespread use of cutting-edge technologies in universities for accounting education. This analysis will assist Chinese HEIs in navigating the current digital landscape and meeting future educational needs.

This study reviews the literature on Chinese higher education performance. The present study has been carefully separated into sections for systematic comprehension. The following discussion examines the literature review approach in detail. Follow-up sections will present study findings. The present findings clarify the key constructs highlighted in the literature. The next part analyzes article distribution across journals and publishing years. This conversation concludes with a proposed investigation itinerary. In conclusion, this review intends to help higher education stakeholders improve institutional performance through technology integration and innovation.

2. Methods

The systematic literature review was conducted for new insights into the existing knowledge regarding accounting higher education institution performance in China. The existing studies have recommended a five-step review process [11, 12]. The first is to specify the time horizon. The current study duration was selected from 2012 to July 2023. The reason was that the present study was focused on technological advancement in higher education, specifically in China. Scarce literature exists on this topic before 2012 [13]. The second step was the selection of a database. The current study includes two well-known databases containing high-quality and peer reviewed scientific journal articles such as Scopus and Web of Science [14, 15]. The third step was the identification of keywords. The literature suggests engaging more than one researcher in searching the keywords. Therefore, the current study's authors were included in the keyword selection. The keywords were researched following Kraus, et al. [16] method. Initially the main keywords such as artificial intelligence, higher education and accounting were searched. The articles provided the missing keywords. The finalized keywords were "artificial intelligence, innovation, accounting practices and technology advancement in higher education institutes of China". The word China was included as the study was conducted regarding the performance of higher education institutes in China. The fourth step was to set exclusion criteria. Therefore, all articles unrelated to the current study topic were excluded.

Further, articles from well-regarded publishers were selected. After implementing the exclusion criteria, 36 studies were considered for this study. Figure 1 presents a detailed overview of the methodology.

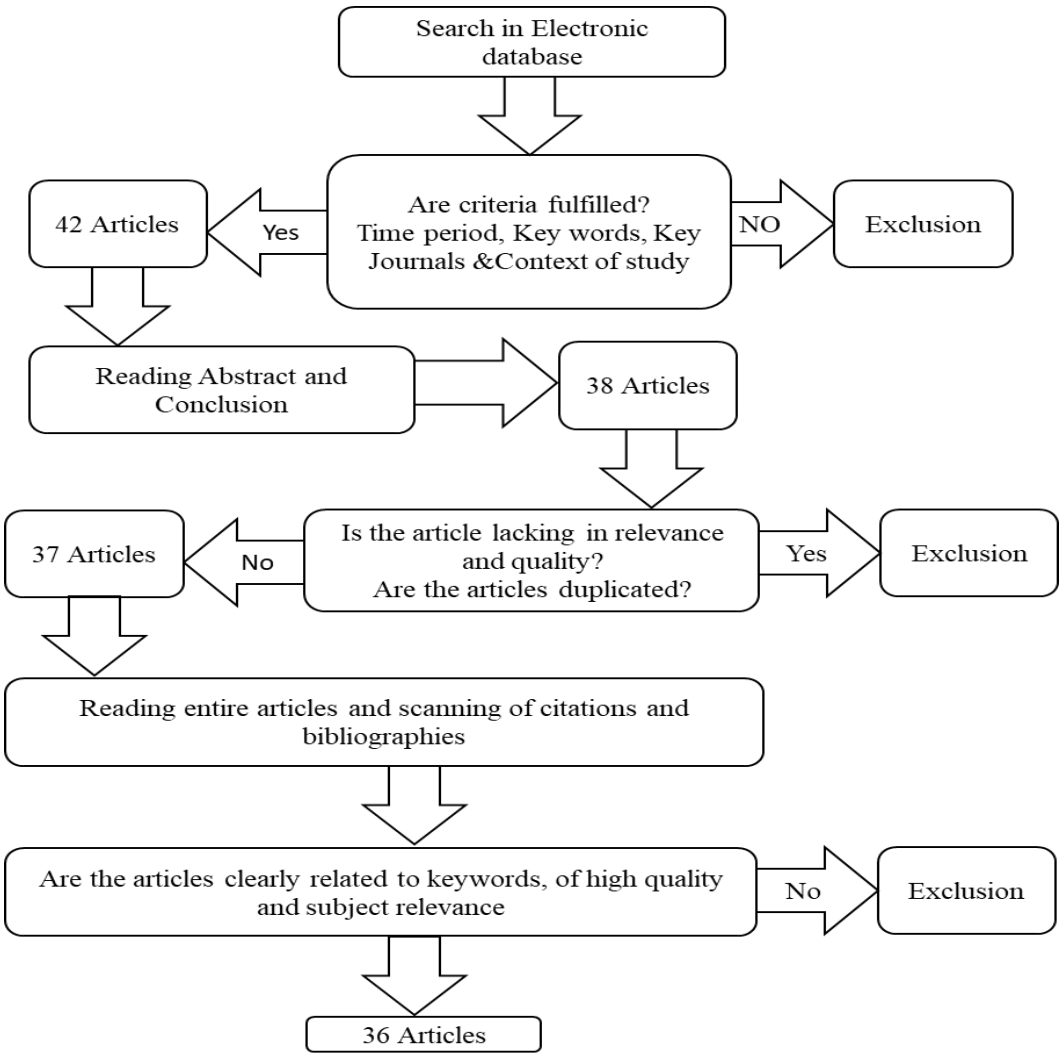

Figure 1.
Methodology.

3. Findings

This study reviews all the articles thoroughly and attempts to identify the focused areas of the studies and their implications in Chinese higher education institutes that provide accounting education. The review results suggested four key areas: innovation characteristics, AI readiness, Technology readiness, and performance of higher education institutes. Most studies have attempted to present new insights for advancing higher education institutes' performance, presented in Table 1. However, these studies have investigated various factors. The current study incorporates all the key constructs for further insights. The key areas are discussed in the subsequent section.

3.1. Innovation Characteristics

Innovation is a multifaceted concept that has greatly impacted higher education. It has transformed teaching, learning, and administrative practices. This extensive review examines the multiple facets of educational innovation in accounting education. Previous studies have investigated the characteristics of innovation with multiple dimensions, such as E-learning [17], digital environments [18], online learning systems, online teaching, chatbots, automated evaluation [19], intelligent laboratories [20], and intelligent tutoring systems in higher education.

E-learning, also called online or electronic learning, is essential to educational innovation. E-learning uses digital technologies to distribute educational materials and enable remote learning [17]. LMSs allow students to access course materials, participate in discussions, and submit assignments from anywhere with internet access. E-learning's flexibility and personalization have transformed traditional education [17].

Digital tools, platforms, and resources have transformed education [18]. Digital tools and technologies make learning fun and interactive. Interactive multimedia content like videos, animations, and simulations lets students actively engage with the material. Cloud-based collaboration tools also allow students to work with peers and instructors in real time [18]. This creates a dynamic and immersive learning environment where students can actively explore and interact with content and collaborate to learn. Digital learning promotes active engagement and knowledge construction. Teachers can use a variety of digital resources to create engaging lessons, encourage collaboration, and share knowledge with students. The digital environment helps faculty, students, and administrative staff communicate and collaborate easily [18]. This digital platform creates an inclusive, interconnected learning community by transcending geographical boundaries.

Online learning systems enable modern distance education by providing a complete and easy-to-use platform for students to participate in virtual classrooms [20]. Online lectures, discussion forums, and collaborative projects enable students to participate in their learning actively regardless of location actively. Online learning systems allow students to manage their study schedules and balance academic and personal obligations [20]. Due to rising demand, these systems are constantly evolving to incorporate new pedagogies and technologies to improve remote learning [20].

Online teaching has changed pedagogy by using technology to teach and engage students. Webinars, video lectures, and live virtual interactions can help teachers engage students and promote active learning. Online teaching methods offer many opportunities to incorporate multimedia resources, interactive simulations, and virtual field trips, enhancing the educational experience. Online teaching allows educators to adapt their methods to students' diverse learning styles. This method also allows instructors to meet the educational needs of a growing, diverse student body.

AI-powered chatbots have become popular in educational support services [21]. These Chatbots respond to student questions instantly and individually, improving the educational experience [21]. AI-powered virtual assistants can handle admissions, enrollment, academic advising, and technical support inquiries. Chatbots improve operational efficiency and student service by streamlining support processes. This improves student satisfaction and experience [21].

Automated evaluation using AI algorithms is changing assessment by streamlining the grading process. Educators can use automated assessment tools to evaluate student performance on assignments, quizzes, and exams [19]. They can quickly give learners useful feedback, facilitating learning. Automated evaluation speeds up assessment and lets teachers focus on more advanced tasks like personalizing instruction and improving pedagogy. This novel aspect of innovation generates data-driven observations of student progress, enabling targeted interventions and personalized assistance [21].

Intelligent laboratories have revolutionized STEM (Science, Technology, Engineering, and Mathematics) education. These laboratories can replicate experimental settings using cutting-edge technologies like virtual reality and simulations, allowing students to have immersive and interactive learning experiences [19]. Intelligent laboratories enable educational scientific exploration. These laboratories offer a cost-effective, secure, and expandable solution. Intelligent laboratories also help students develop critical thinking and scientific understanding [19]. Intelligent laboratories can also promote cross-disciplinary collaboration, making novel research directions easier to pursue [19].

Intelligent tutoring systems demonstrate the enormous potential of AI in personalized learning. These systems analyze learner data to determine strengths, weaknesses, and learning preferences. This analysis lets systems customize learning materials and pathways for each student. Intelligent tutoring systems (ITS) provide customized learning support [19]. This method improves learning and promotes self-directed learning. This innovation dimension has the potential to improve educational equity. It addresses individual learning barriers to improve engagement and academic performance [19].

In conclusion, higher education innovation has caused a paradigm shift that has fundamentally changed knowledge dissemination, acquisition, and evaluation methods. E-learning, digital environments, online learning systems, online teaching, chatbots, automated evaluation, intelligent laboratories, and intelligent tutoring systems have transformed education. These advancements have provided students and educators with a wealth of new tools, resources, and opportunities to navigate the educational world in new ways. These innovative elements are crucial as the educational ecosystem evolves. Doing so will promote academic excellence, lifelong learning, and the skills and competencies needed to succeed in a changing global society.

3.2. AI Readiness

AI readiness in higher education refers to an institution's ability to use artificial intelligence technologies [3]. Integrating AI-related capabilities, infrastructure, and pedagogical practices into teaching, learning, research, and administrative processes requires a strategic approach. The following dimensions demonstrate higher education AI readiness:

Artificial Intelligence Capability is the institution's ability to use AI to advance [3]. This dimension involves developing and implementing AI-powered applications, algorithms, and systems to meet various academic and administrative needs [3]. Educational institutions can maximize AI capabilities by emphasizing AI research, collaborating with industry experts, and training faculty and staff in AI. This can improve student learning and institutional operations [3].

An Intelligent Classroom uses AI technologies to improve teaching methods and student engagement [22]. AI-powered adaptive learning systems, virtual teaching assistants, and smart content recommendations enhance learning by providing students with interactive and personalized experiences [22]. AI algorithms assess student preferences and learning styles [22]. They improve learning by tailoring content and activities to each student [22]. AI could improve education and student learning. The Intelligent Classroom customizes learning for each student using data collection and analysis [22]. This method improves educational efficiency, inclusivity, and effectiveness. AI-enhanced platforms and apps make up an Intelligent Learning System [23]. Optimizing learning is the goal of these systems [23]. These systems use machine learning algorithms and data analytics to assess student performance, identify knowledge gaps, and recommend learning materials [23]. Intelligent Learning Systems promote collaborative learning, adaptive testing, and continuous assessment [23]. These systems enable educators to provide personalized support and interventions, improving student outcomes [23].

Intelligent Information Processing (IIP) uses AI to manage and analyze educational data [24]. IIP efficiently manages and analyses massive educational data using these advanced methods [24]. Natural language processing, data mining, and machine learning algorithms allow institutions to gain insights from student performance data, institutional metrics, and research outputs [24]. Intelligent Information Processing streamlines administrative tasks, facilitates evidence-based decision-making, and provides timely feedback to optimize academic and operational strategies [24].

In summary, higher education institutions' AI readiness depends on their ability to harness the technology's transformative power. Adopting and integrating AI capabilities can create innovative learning environments, improve student

experiences, and enable data-informed decision-making in higher education. The Intelligent Classroom and Intelligent Learning System use AI algorithms to personalize and optimize educational content and delivery. Higher education institutions must prioritize AI readiness to remain flexible, adaptable, and successful in a data-centric, fast-changing world.

3.3. Technology Readiness

Technology readiness is determined by technological advancement and user adoption. Augmented Reality (AR) has advanced significantly in modern technology [25]. AR has advanced in hardware and software, enabling more sophisticated and immersive experiences [25]. AR applications with improved realism and user experiences are possible thanks to advances in display technologies, processing power, and sensors [25]. AR has made great strides in user adoption [25]. AR has become mainstream thanks to mobile gaming and social media filters. Education, healthcare, and retail have also begun using AR to improve their fields. AR technology has improved learning, medical procedures, and shopping experiences [26]. AR's growing acceptance and use across industries bodes well for its widespread adoption. AR is becoming more technologically ready due to ongoing technological advancements and user acceptance [26]. However, privacy concerns, content generation challenges, and the need for affordable hardware alternatives must be addressed to fully utilize this technology [26]. As the above challenges are addressed and overcome, AR will become more ready, solidifying its role in our current technological environment.

3.4. Performance of Higher Education Institutes

Higher education institutions shape individuals and societies by providing advanced education and the skills to overcome many professional and personal challenges [27]. These educational institutions' performance depends on several key factors that affect the quality and efficacy of their accounting education. It is necessary to examine each dimension individually to understand its importance in higher education performance in providing accounting education.

Higher education aims to teach and train students to produce the best accountants. Learning performance is crucial to assessing students' knowledge acquisition, retention, comprehension, and application [27]. The dimension under consideration includes many factors, including student completion rates, academic accomplishments, and learning outcomes. Academic excellence and student success are hallmarks of high-performing schools [27].

Accounting higher education prioritizes student creativity in providing education. Creativity is the ability to think differently, develop new ideas, and solve problems in new ways [27]. It involves the ability to think outside the box and find creative solutions. Creativity fosters innovation and adaptability and is crucial in a fast-changing world. Creativity-focused curricula and teaching methods can produce accountants with enhanced abilities to contribute to society and advance diverse industries [27].

Self-efficacy is the belief that one can achieve academic goals and overcome educational challenges [27]. According to research, higher education can boost students' self-efficacy, motivation, and well-being [27]. High-self-efficacy learners often adopt a growth mindset. This mindset sees challenges as opportunities to grow. Thus, people perform better academically and are more resilient [27].

Students' teaching evaluations are valued for higher education improvement [28]. Student feedback on learning experiences and teaching methods helps instructors identify their strengths and weaknesses. Faculty can use student feedback to enhance their teaching methods, curriculum, and learning environment [28].

Educational institutions use quality assurance to meet performance standards to generate well-equipped accountants. These include teaching methods, learning outcomes, research, infrastructure, and support. Internal and external evaluations help the institute maintain and improve education quality [28]. Students, parents, employers, and society gain confidence in higher education institutes by implementing robust quality assurance mechanisms [28].

Academic discourse helps students develop critical thinking, intellectual growth, and scholarly skills. Students and faculty benefit from open discussions, debates, and collaboration [28]. Academic discourse encourages curiosity, intellectual inquiry, and challenging conventional wisdom [28].

Access to educational materials on accounting is crucial to students' academic success. Learning resources include many tools and materials that make learning easier [29]. Libraries, databases, research materials, multimedia tools, and other sources offer these resources. These resources improve learning and provide a wealth of information about accounting. Students can conduct independent research to explore multiple fields of accounting and access current and relevant information at universities with ample learning resources [29].

Teamwork and collaborative learning strategies in schools prepare students for the collaborative nature of the workplace [29]. Students collaborate on accounting projects, research, and presentations in higher education [29]. Teamwork skills help students communicate and collaborate, fostering empathy and respect. These skills are crucial for success in modern workplaces that value collaboration and good communication [29].

The curriculum of accounting underpins higher education. A forward-thinking and relevant curriculum of accounting subjects is crucial to prepare students for the 21st century. A well-designed curriculum aligns with industry needs, societal expectations, and emerging trends, ensuring that students gain the knowledge, skills, and competencies they need to succeed in in accounting field.

Higher education institutions must adapt and reform accounting educational practices to stay dynamic and responsive [29]. Research, feedback, and educational trends guide this process [29]. Educational reforms are necessary to adapt to students' changing needs and the global environment. Reforms can improve education in many ways [29]. These interventions can include changes to teaching methods, curricular content, technology integration, and strategies to boost student engagement and educational outcomes [29].

In conclusion, the efficacy of higher education institutions depends on many factors. These educational institutions can enrich and influence students by excelling in learning performance, student creativity, self-efficacy, student evaluation of teaching, quality assurance, academic discourse, language training, learning resources, teamwork advancement, curriculum development, and educational reform. Continuous improvement in these areas is necessary to provide students with the skills and knowledge they need to succeed in school, work, and life. Progress in these areas empowers individuals to contribute to society and the world.

3.5. Accounting Practices in Higher Education Institutes

China's higher education sector has grown and evolved in recent decades, becoming a global educational powerhouse [30]. Accounting education in Chinese HEIs has grown in importance due to their role in financial transparency, accountability, and resource allocation [31]. In a world of changing educational needs and global higher education, artificial intelligence (AI) is transforming accounting methods [32]. Machine learning and data analytics are powerful AI-driven tools. These tools can improve financial management in Chinese higher education institutions [33]. AI reduces human error and provides valuable insights into financial trends and resource allocation by automating routine accounting tasks, analyzing large datasets for financial forecasting, detecting anomalies in financial records, and streamlining auditing processes. AI in accounting could improve China as a whole [33].

AI-optimized financial management in higher education institutions could improve cost-effectiveness and transparency. Effective financial resource allocation and educational quality improvement result from this [34]. The implementation of AI-driven practices in various sectors of China's economy could serve as a model. This model can boost national financial management and transparency. The above economic and educational advancements could strengthen China's global leadership in education and innovation. This literature review examines China's higher education system's use of AI. Academics, policymakers, and administrators should find this review useful. This review examines AI implementation in higher education to determine its pros and cons. It also emphasizes the importance of accounting practices in ensuring higher education success and contributing to China's economic and educational development.

Table 1.
Findings of previous studies.

Focused Area	Author	Findings
Innovation Characteristics	Fu et al. [17]	Artificial Intelligence-based Efficient E-learning Framework (AI-EELF) has been proposed to overcome the challenges faced by China's higher education while implementing e-learning modules. The experimental results show that the proposed AI-EELF achieves high performance, prediction ratio in determining students' learning style, and improves teaching quality compared to other existing methods.
	Lu [18]	Teachers and students have a positive attitude to the use of AI tools in terms of immediate and clear feedback, time-saving, and arousing interests in writing; and AI-tools still needs to be perfected as it cannot provide proper evaluation on the text structure, content logic, and coherence. So, both teachers and students should take the score from AI-tools objectively.
	Zhou [20]	Artificial intelligence integration has demonstrated its effectiveness in the context of improving student performance in five humanities and exact subjects.
	Guo and Liu [21]	The updated technology will not only help foreign students to solve the problem of Chinese learning successfully, but also make important contributions to the learning of Chinese students.
	Cao et al. [19]	This study enriches the TRA and TAM theories by incorporating a new variable, political influence, for researchers to consider in the future. In addition, it makes several suggestions for system developers to improve system functions regarding its ease of use and for content manufacturers to pay attention to quality regarding usefulness.
AI-readiness	Wang et al. [3]	Higher Education Institutes (HEIs) artificial intelligence capability is a three-order variable and is formed by three formative second-order variables: resources (data, technical, basic resources), skills (technical skills, teaching applications, collaboration competencies), and consciousness (reform, innovation consciousness). HEIs' artificial intelligence capability significantly affects students' self-efficacy and creativity. HEIs' artificial intelligence capability affects students' learning performance via two mediating variables: student creativity and self-efficacy.
	[22]	An intelligent classroom based on artificial intelligence technology is helpful in enhancing interactive learning and promoting the construction of an intelligent campus.
	Osetskyi et al. [23]	The highest rates of growth are typical for the Asia-Pacific region, particularly for fast-growing economies such as China and South Korea; the North American market for AI in education still maintains the lead.
	He et al. [24]	This paper outlines the related courses of financial science and technology in the machine learning specialty, enhances the relevance between courses, enables the

		courses to connect and cooperate with each other, and forms a chain of an excellent course group. It strengthens theoretical research and strives to build a high-level teaching team to create a more three-dimensional approach that is closer to the needs of the times.
Technology Readiness	Cui [25]	Augmented reality (AR) mobile applications are helpful in enhancing the learning abilities of students.
	Lorenzo et al. [26]	Establishment of a learner's role-play are helpful to improve learners' skills.
Higher Education Institute performance	Pineda and Steinhardt [27]	Student Teaching Evaluation (SET) originated in the US in the 1970s, spreading to German-speaking countries in the mid-1990s and continuing in China and Latin America in the early 2000s. (2) SET is commonly viewed as a control tool deserving of methodological improvement, while bias is debated in the US. We also found local trajectories: (3) Whereas in the US and Latin America, SET is primarily seen as a management tool, German-speaking and Chinese authors reflect more on improving teaching. Chinese scholars consider SET a valid instrument for state control associated with artificial intelligence. Also, (4) SET is commonly used in medical education in the US and the German-speaking region and in physical education in China.
Accounting practices in Higher education institutes	Cunha et al. [35]	The results show that transversal skills will be crucial in maintaining the relevance of the accounting profession, but HEIs seem to focus their curricula almost entirely on technical competencies and hard skills. There are, therefore, substantial divergences between what literature preaches and what educational practices reflect, not unlike what is being reported worldwide. The origins and solutions to this apparent paradox are explored to contribute to good practices in other contexts and serve as a cautionary tale for other countries' professional systems.
	Jain [36]	The BRI has provided a platform for China to shape the educational architecture of the participating countries, apart from receiving a boost in its prestige by leading educational alliances and opening overseas research centers. In quantitative terms, it has made progress in specific knowledge metrics. Nevertheless, certain challenges and limitations need to be overcome.
	Yuan et al. [28]	The features of virtual reality (VR) technology could make up for the shortcomings of traditional English classes in open universities in China, and VR resources designed with curriculum teaching materials could also be helpful for students' command of knowledge points and language skills.
	Liu et al. [29]	Grouping students based on their strengths (for example, the courses in which they excel) can enhance students' interest in the specialized project design (SPD) course and thereby improve students' SPD performance.

3.6. Article Distribution

Most of the articles considered for the current study were from journals related to artificial intelligence and computers. The highest number of articles was from "Mobile Information Systems," followed by "Wireless Communication and Mobile Computing." However, there was only one article from an education-related journal, such as "Educational Sciences: Theory and Practices." The detailed distribution of articles across journals is presented in Table 2.

Table 2.
Article distribution over journals.

Sr. No	Journal name	No of articles
1	Mobile Information System	9
2	Wireless communications mobile computing	7
3	International journal of electrical engineering education	6
4	Security and communication network	5
5	Education and information technologies	4
6	Soft computing	2
7	Educational sciences theory practices	3

3.7. Publication Year

This study selected the articles published between 2012 and 2023. The current study focuses on technological advancements, such as artificial intelligence. Artificial intelligence was incorporated into education during COVID due to distance learning. Most of the articles were published in 2022, followed by 2021 and 2020, respectively. Figure 2 presents the detailed distribution of articles by year.

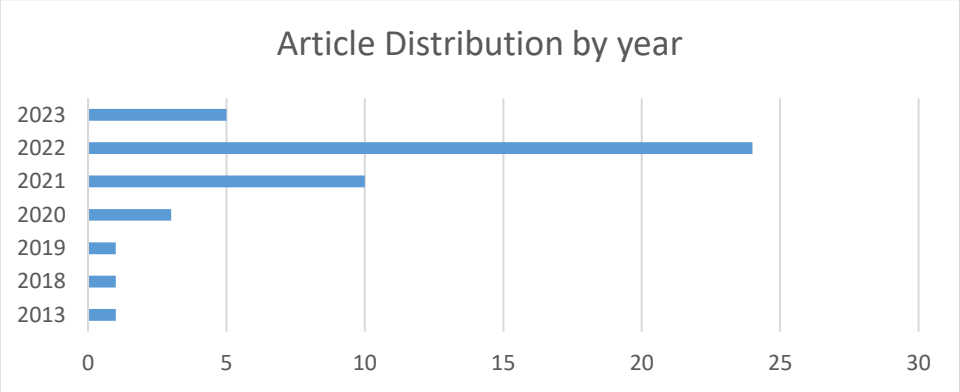

Figure 2.
Article distribution by year.

4. Future Research Directions

There are multiple research gaps that future researchers can fill. Most existing researchers have investigated multiple factors to analyze the performance of higher education institutes in China. Based on the literature review, the current study has incorporated all the dimensions suggested by the literature. Further, the current study proposes a framework to analyze higher education institutions' performance. The framework is presented in Figure 3. This study proposes that higher education institutes' performance depends on innovation characteristics, where AI readiness is a mediator and technology readiness is a moderator.

In the fast-paced world of higher education, innovation is key to success [37]. Academic institutions are integrating innovative methods to stay relevant and meet students' changing needs [38]. Innovation characteristics can improve teaching methods, student engagement, and learning outcomes. E-learning, digital environments, online learning systems, online teaching, chatbots, automated evaluation, intelligent laboratories, and intelligent tutoring systems [38]. This study examines relevant scholarly works, case studies, and empirical data to demonstrate how higher education innovation affects institutional success.

Innovation has made universities more successful and prestigious. E-learning lets students work at their own pace and is more accessible [39]. The digital environment simplifies technology integration, improving administrative and academic processes [40]. Online learning and teaching have changed pedagogy. Interactive and personalized learning meets students' diverse needs and learning styles with these advances. Chatbots speed up student support and promote academic health. Automated evaluation processes speed up assessment, helping instructors improve their pedagogy and giving students immediate feedback [41]. Intelligent laboratories and tutoring systems also encourage student creativity and innovation. This integration has given them simulated environments for experimentation and problem-solving. These innovation traits can help higher education institutions foster continuous improvement and flexibility [2]. This helps students develop the skills and knowledge needed to succeed in a fast-paced, competitive global environment.

Innovation and higher education performance are symbiotic [42]. Educational institutions have realized the importance of incorporating various advancements to create progressive, student-centered environments [43]. These include integrating E-learning platforms, digital environments, online learning systems, online teaching methodologies, chatbots for improved communication, automated evaluation tools, intelligent laboratories, and intelligent tutoring systems. These innovative methods can improve teaching, student engagement, personalized learning, and institutional efficiency [44]. Therefore, based on the literature, it can be proposed that:

P1: The performance of higher education institutes might be assessed through innovative characteristics.

4.1. AI Readiness as a Mediator

In the ever-changing digital world, higher education institutions must adopt innovative practices [45]. Innovative approaches have been prioritized to improve institutional performance and meet students' diverse needs [46]. The above elements include E-learning, online teaching methods, automated evaluation systems, and intelligent tutoring systems. AI readiness has become crucial to integrating and implementing innovative traits amid the ongoing transformation.

AI readiness refers to how well an organization can use AI technologies [47]. This drives institutional innovation. Technical infrastructure and support are essential for higher education AI readiness [48]. These institutions are well-prepared to handle the challenges of incorporating cutting-edge technologies [49]. Machine learning algorithms, natural language processing, and data analytics can improve online learning systems [50]. Educational platforms can personalize tutoring and streamline assessment using these cutting-edge technologies, improving efficiency and student engagement [51].

AI readiness promotes adaptability, exploration, and technical assistance. AI-ready institutions encourage stakeholders to try new things [52]. Adopting a growth mindset helps educators and administrators adopt innovative teaching methods [10]. AI-powered tools help educators meet students' diverse learning preferences. AI readiness depends on data-driven decision-making [53]. AI-enabled analytics can help schools understand student performance, engagement, and preferences. Data-driven methods allow educators to pinpoint areas for improvement, adapt educational programs, and implement targeted interventions for struggling students [54]. AI readiness lets people make evidence-based decisions. This phenomenon improves higher education institutions and student success.

AI readiness mediates the relationship between innovation attributes and higher education institutions' operational effectiveness. Assessing AI readiness helps integrate cutting-edge technologies. Technical support—including infrastructure and resource setup—helps AI solutions work. Employee adaptability is essential for AI integration [55]. This requires giving them the skills and knowledge to use AI effectively.

Data-driven insights help organizations make informed decisions and improve AI system efficiency, making them vital to AI readiness [56]. AI readiness is a complex framework that integrates cutting-edge technologies. Proactively integrating artificial intelligence (AI) into higher education operations can improve performance, student experiences, and innovation [57]. This approach can help these schools give students the skills and knowledge they need to succeed in a changing world. Therefore, based on the literature, it might be proposed that:

P2: AI readiness might be a key mediator between the relationship of innovative characteristics and the performance of higher education institutes.

4.2. Technology Readiness as Moderator

Technology readiness moderates the AI readiness-higher education institution performance relationship. Technology readiness means an institution has the infrastructure, resources, and skills to adopt and use AI-driven tools and innovations [58]. E-learning, intelligent tutoring systems, and automated evaluation require technology readiness in higher education [17].

High-tech institutions can use AI technologies more effectively, making innovation characteristics easier to implement [59]. When institutions have strong technical infrastructure and resources, AI-powered tools improve efficiency, personalization, and data-driven decision-making [56]. Technologically ready institutions train and support faculty and staff to use AI technologies to create engaging and impactful student learning experiences [60]. Thus, higher technology readiness may improve AI readiness and higher education performance. Technology readiness also affects data management, which is essential for AI-driven higher education innovations [61]. AI uses data for personalized learning, predictive analytics, and evidence-based decision-making. AI readiness can help institutions with advanced data management systems improve student outcomes [62]. Strong data infrastructure improves an institution's AI readiness and performance.

Technology readiness affects the scalability and integration of AI-driven innovations across higher education departments and units [63]. Technology readiness facilitates AI-powered tool integration and adoption, encouraging innovation and adaptability. Institutions with lower technology readiness may struggle to implement AI-driven initiatives, limiting the potential benefits of innovation characteristics in improving higher education performance [39]. Technology readiness moderates AI readiness and higher education institution performance. Technology-ready institutions can use AI to integrate innovation traits more smoothly. Higher education institutions can maximize AI readiness by fostering technological proficiency and data management. This improves institutional outcomes and student success [48]. Therefore, it might be proposed that:

P3: Technology readiness might strengthen or weaken the relationship between AI readiness and the performance of higher education.

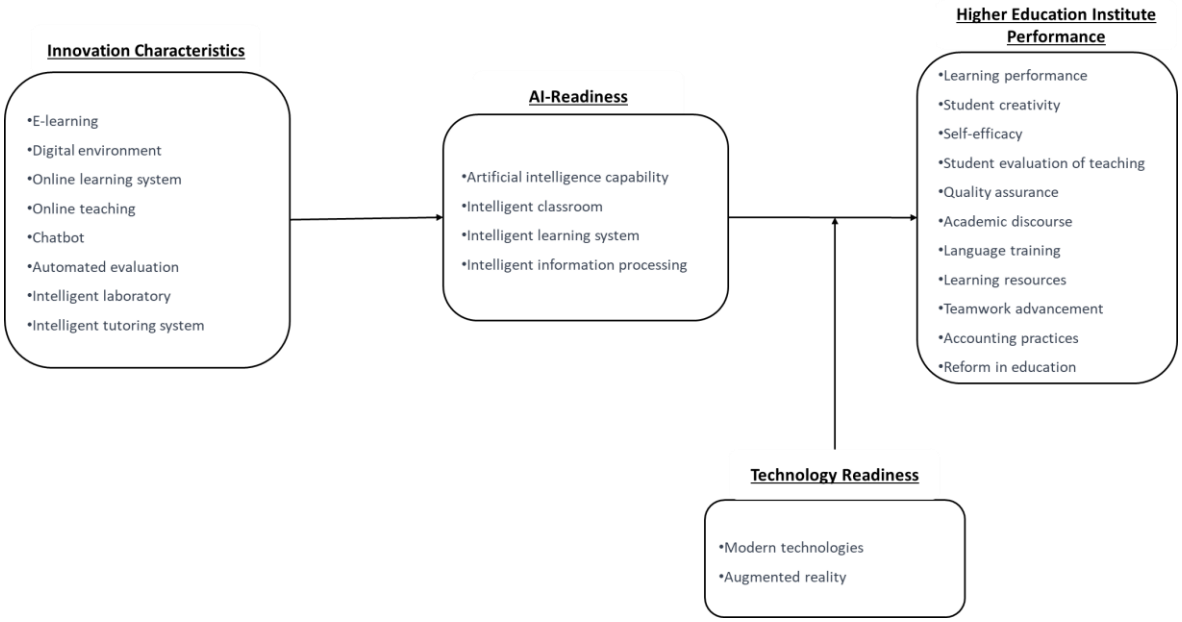

Figure 3.
Framework for future research.

4.3. Contributions of the Study

4.3.1. Theoretical Contribution

This systematic review explores the complex connection between AI readiness, technology readiness, innovation characteristics, and higher education performance, providing valuable contributions to theoretical understanding in the field of higher education research and technology integration. The study uncovers the role of AI readiness in bridging the gap between innovation characteristics and institutional outcomes, contributing to our theoretical knowledge of the crucial factors that influence the successful integration of innovative technologies in higher education. In addition, studying the impact of technology readiness on the connection between AI readiness and institutional performance provides insights into how technological infrastructure and capabilities affect AI-driven innovations. The study highlights the importance of taking into account the unique technological environment of higher education institutions. It offers theoretical frameworks to examine the influence of various technology readiness levels on AI readiness in different institutional contexts.

This study expands upon the investigation and verification of the Innovation Diffusion Theory in the specific setting of higher education institutions in China. Centered on the adoption and implementation of new technologies, specifically in the realm of accounting studies, the study aims to validate the significance of the Innovation Diffusion Theory pioneered by Everett Rogers. This theoretical framework provides a comprehensive analysis of how innovations are adopted and become prominent within a social system, specifically focusing on accounting practices in Chinese higher education. It offers detailed insights into the acceptance and impact of these innovations. In addition, the study adds to the existing body of knowledge on the Resource-Based View (RBV) theory, which highlights the significance of an organization's resources in attaining and maintaining a competitive advantage. An analysis of the technological and human resources related to accounting practices in Chinese higher education can offer valuable insights into the principles of the Resource-Based View (RBV). This study aims to provide a holistic understanding of how these resources contribute to the overall effectiveness of educational institutions. Through a meticulous examination and validation of these theories, the paper deepens our comprehension of the intricate dynamics that encompass the adoption of innovation and the utilization of resources in higher education institutions in China.

The paper provides a comprehensive perspective by synthesizing various theoretical frameworks, establishing a strong academic foundation for future research endeavors. The findings from this study inform the creation of detailed frameworks and models to assist in the successful integration of technology, enhance institutional performance, and adapt to the ever-changing landscape of Chinese higher education in the digital age.

4.4. Practical Contribution

The systematic review helps higher education stakeholders improve institutional performance through technology integration and innovation. To improve technology readiness, invest in technology infrastructure and resources. Institutions can prioritize technical capabilities, access to cutting-edge tools, and robust data management systems. Institutions can create a supportive environment for AI-driven innovations and process optimization.

The review also stresses the importance of training and supporting faculty and staff for AI readiness. Professional development on AI-driven technologies empowers educators to use these tools effectively, improving teaching methods and personalizing student learning. Higher education innovation requires strategic planning and leadership. Institutions can develop comprehensive plans that align technology integration with institutional goals to ensure a cohesive and purposeful approach to innovation implementation. Strategic planning with stakeholders promotes technological advancement. Institutions can personalize learning with AI tools. Personalizing educational content and support boosts student engagement, performance, and satisfaction. Technology integration prepares students for future workplace challenges. Higher education institutions can improve graduates' employability and readiness for a technology-driven world by teaching digital literacy and exposing them to cutting-edge technologies.

This systematic review provides actionable steps for institutions to improve performance in the digital age. Higher education stakeholders can use AI-driven innovations and innovation characteristics to benefit the institution and its students by improving technology and AI readiness, strategically planning for innovation integration, and fostering a culture of adaptability.

5. Conclusion

This systematic review examines how AI readiness and technology readiness affect innovation characteristics and higher education institution performance. The analysis highlighted the relationship between AI preparedness, innovation, and higher education outcomes. AI readiness facilitates innovative technology adoption. AI-ready institutions can use AI-powered tools to improve operational efficiency, learning experiences, and data-driven decision-making. The review also emphasizes technology readiness's moderating effect on the magnitude and direction of the AI readiness-institutional performance relationship. Technology readiness has helped the institution integrate and adopt AI-driven innovations across departments. The organization's efficiency and effectiveness have improved due to the seamless integration of AI-driven solutions.

This comprehensive review highlights the importance of AI readiness and technology readiness for higher education institutions seeking to improve performance and innovate. The review emphasizes investing in technology infrastructure, training and supporting faculty and staff, and data management. This review also reveals the complex relationship between AI readiness, technology readiness, accounting education in higher education institutions, and higher education technology integration innovation. Maximizing AI-driven higher education advances requires these steps. This study also illuminates the complex relationship between AI readiness, technology readiness, and innovation in accounting higher education technology integration. This study affects accounting higher education providers. These findings foster an innovative, adaptable culture.

The recommendations of this research can boost higher education outcomes and student success. In the digital age, higher education needs AI and technology readiness. This knowedge is essential for improving education and equipping students to overcome obstacles and seize opportunities.

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