

The copyright © of this thesis belongs to its rightful author and/or other copyright owner. Copies can be accessed and downloaded for non-commercial or learning purposes without any charge and permission. The thesis cannot be reproduced or quoted as a whole without the permission from its rightful owner. No alteration or changes in format is allowed without permission from its rightful owner.



**FACTORS INFLUENCING THE ADOPTION OF ARTIFICIAL
INTELLIGENCE IN THE ACCOUNTING DEPARTMENTS OF
TECHNOLOGY-BASED SMES IN SHAANXI PROVINCE**

CHEN YUBO



**MASTER OF SCIENCE
(INTERNATIONAL ACCOUNTING)
UNIVERSITI UTARA MALAYSIA
MARCH 2025**

**FACTORS INFLUENCING THE ADOPTION OF ARTIFICIAL
INTELLIGENCE IN THE ACCOUNTING DEPARTMENTS OF
TECHNOLOGY-BASED SMES IN SHAANXI PROVINCE**



**Thesis Submitted to
Tunku Puteri Intan Safinaz School of Accountancy,
Universiti Utara Malaysia,
In Fulfillment of the Requirement for the Degree of Master of Science
(International Accounting)**



Kolej Perniagaan
(College of Business)
Universiti Utara Malaysia

PERAKUAN KERJA DISERTASI/KERTAS PENYELIDIKAN/KERTAS PROJEK
(Certification of thesis / dissertation)

Kami, yang bertandatangan, memperakukan bahawa
(We, the undersigned, certify that)

CHEN YUBO (833263)

calon untuk Ijazah **MASTER OF SCIENCE (INTERNATIONAL ACCOUNTING)**
(candidate for the degree of)

telah mengemukakan tesis / disertasi yang bertajuk:
(has presented his/her thesis / dissertation of the following title):

**FACTORS INFLUENCING THE ADOPTION OF ARTIFICIAL INTELLIGENCE IN THE ACCOUNTING
DEPARTMENT OF TECHNOLOGY-BASED SMES IN SHAANXI PROVINCE**

seperti yang tercatat di muka surat tajuk dan kulit tesis / disertasi.
(as it appears on the title page and front cover of the thesis / dissertation).

Bahawa tesis/disertasi tersebut boleh diterima dari segi bentuk serta kandungan dan meliputi bidang ilmu dengan memuaskan, sebagaimana yang ditunjukkan oleh calon dalam ujian lisan yang diadakan pada:

(That the said thesis/dissertation is acceptable in form and content and displays a satisfactory knowledge of the field of study as demonstrated by the candidate through an oral examination held on:

Pengerusi Viva :
(Chairman for Viva)

Tandatangan
(Signature)

Pemeriksa Dalam :
(Internal Examiner)

PROF. MADYA DR. AKILAH ABDULLAH

Tandatangan
(Signature)

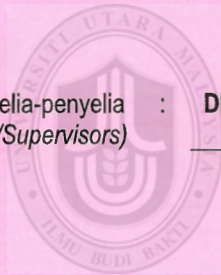
Tarikh: **29 MEI 2025**
(Date)

Nama Pelajar
(Name of Student) : **CHEN YUBO (833263)**

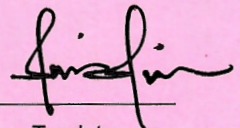
Tajuk Tesis / Disertasi
(Title of the Thesis / Dissertation) : **FACTORS INFLUENCING THE ADOPTION OF ARTIFICIAL INTELLIGENCE
IN THE ACCOUNTING DEPARTMENT OF TECHNOLOGY-BASED SMES IN
SHAANXI PROVINCE**

Program Pengajian
(Programme of Study) : **M20D – MASTER OF SCIENCE (INTERNATIONAL ACCOUNTING**

Nama Penyelia/Penyelia-penyelia
(Name of Supervisor/Supervisors) : **DR. YURITA YAKIMIN ABDUL TALIB**



UUM
Universiti Utara Malaysia


Tandatangan

PERMISSION TO USE

In presenting this project paper in partial fulfillment of the requirements for a Post Graduate degree from the Universiti Utara Malaysia (UUM), I agree that the Library of this university may make it freely available for inspection. I further agree that permission for copying this project paper in any manner, in whole or in part, for scholarly purposes may be granted by my supervisor or in their absence, by the Director of Postgraduate Studies Unit, College of Business where I did my project paper. It is understood that any copying or publication or use of this project paper parts of it for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to the UUM in any scholarly use which may be made of any material in my dissertation/project paper.

Request for permission to copy or to make other use of materials in this thesis in whole or in part should be addressed to:



Director of Postgraduate Studies Unit, College of Business
Universiti Utara Malaysia
06010 UUM Sintok
Kedah Darul Aman



ABSTRACT

The growing adoption of artificial intelligence (AI) in accounting promises substantial improvements in efficiency, accuracy, and compliance. However, the adoption process among small and medium-sized enterprises (SMEs), particularly in China's less-developed regions, remains underexplored. This study investigates the key determinants influencing AI adoption in the accounting departments of technology-based SMEs in Shaanxi Province, China. The research is theoretically grounded in the Technology - Organization - Environment (TOE) framework, and is further supported by Information Quality Theory, System Integration Theory, Institutional Theory, and Human Capital Theory. Four core constructs are examined: data quality, system integration, legal and compliance readiness, and talent availability. A quantitative research design was adopted using structured questionnaires distributed to finance managers, IT managers, and senior executives from a sample of 377 SMEs. The data were analyzed through correlation and multiple regression techniques. The results indicate that system integration, legal and compliance readiness, and talent availability significantly affect AI adoption, while data quality shows no statistically significant impact. This study contributes to theory by contextualizing the TOE framework within AI adoption in SME accounting. It also offers practical recommendations for SMEs and policymakers to develop targeted strategies that support digital transformation and AI integration in accounting operations.

Keywords: AI adoption, SMEs, data quality, legal and compliance readiness, system integration

ABSTRAK

Penggunaan kecerdasan buatan (AI) yang semakin meningkat dalam perakaunan menjanjikan peningkatan yang ketara dalam kecekapan, ketepatan dan pematuhan. Walau bagaimanapun, proses penerimaan di kalangan perusahaan kecil dan sederhana (PKS), terutamanya di kawasan kurang membangun di China, masih kurang diterokai. Kajian ini menyiasat penentu utama yang mempengaruhi penggunaan AI dalam jabatan perakaunan PKS berasaskan teknologi di Wilayah Shaanxi, China. Penyelidikan ini secara teorinya berasaskan rangka kerja Teknologi–Organisasi–Persekitaran (TOE), dan seterusnya disokong oleh Teori Kualiti Maklumat, Teori Integrasi Sistem, Teori Institusi dan Teori Modal Insan. Empat konstruk teras diperiksa: kualiti data, penyepaduan sistem, kesediaan undang-undang dan pematuhan, dan ketersediaan bakat. Reka bentuk penyelidikan kuantitatif telah diterima pakai menggunakan soal selidik berstruktur yang diedarkan kepada pengurus kewangan, pengurus IT dan eksekutif kanan daripada sampel 377 PKS. Data dianalisis melalui teknik korelasi dan regresi berganda. Keputusan menunjukkan bahawa penyepaduan sistem, kesediaan undang-undang dan pematuhan serta ketersediaan bakat memberi kesan ketara kepada penggunaan AI, manakala kualiti data tidak menunjukkan kesan yang signifikan secara statistik. Kajian ini menyumbang kepada teori dengan mengkontekstualisasikan rangka kerja TOE dalam penggunaan AI dalam perakaunan PKS. Ia juga menawarkan cadangan praktikal untuk PKS dan penggubal dasar untuk membangunkan strategi sasaran yang menyokong transformasi digital dan integrasi AI dalam operasi perakaunan..

Kata kunci: Penerimaan AI, PKS, kualiti data, kesediaan undang-undang dan pematuhan, integrasi sistem

ACKNOWLEDGEMENT

First, I would like to express my sincere gratitude to my supervisor Dr. Yurita Yakimin Abdul Talib for her assistance with my final project paper. My supervisor, Dr Yurita, provided professional and patient guidance, and gave me a lot of academic inspiration in selecting topics, writing and revising the project paper. And throughout the research period, my supervisor not only taught me how to write an article, but also how to identify problems and think about them.

Secondly, I would like to appreciate all those who helped me successfully complete this project paper. I would like to thank my friends in China for helping me distribute the questionnaires together, and my doctoral friends for helping me check and revise the questionnaires. Without their participation, this research could not have been successfully completed. I would like to thank them for their help, support and understanding throughout my research.

Finally, I would like to thank my parents and my girlfriend for giving me unconditional trust and allowing me to finish on my studies. Their expectations, encouragement and companionship in the face of difficulties have been my greatest motivation to learn. I am grateful to them for creating a warm research atmosphere for me.

TABLE OF CONTENTS

TITLE PAGE	I
CERTIFICATION OF THESIS WORK	II
PERMISSION TO USE	III
ABSTRACT	IV
ABSTRAK	V
ACKNOWLEDGEMENT	VI
TABLE OF CONTENTS	VIII
LIST OF TABLES	IX
LIST OF FIGURES	X
LIST OF ABBREVIATIONS	XI
CHAPTER ONE INTRODUCTION	1
1.1 Background	1
1.2 Problem Statement	7
1.3 Research Questions	12
1.4 Research Objectives	12
1.5 Significance of the study	13
1.6 Scope of study	14
1.7 Definition of Key Terms	16
1.8 Organization of Thesis	17
CHAPTER TWO LITERATURE REVIEW	19
2.1 Introduciton	19
2.2. Previous Related Studies	19
2.2.1 AI Adoption	19
2.2.2 Data Quality	22
2.2.3 System Integration	23
2.2.4 Legal and Compliance Readiness	26
2.2.5 Talent Availability	27
2.3 Conclusion	29
CHAPTER THREE METHODOLOGY	31
3.1 Introduction	31
3.2 Theory	31
3.3 Research Framework and Research Hypotheses	35
3.3.1 Research Framework	35
3.3.2 Hypotheses Development	36
3.4 Research Design	40
3.5 Population, Sample and Sampling Technique	41
3.5.1 Population	41
3.5.2 Sample Size	42
3.6 Questionnaire Design	43
3.7 Research Measurement	44
3.8 Data Collection	46
3.9 Data Analysis Technique	47

3.9.1 Reliability and Validity Analysis	48
3.9.2 Descriptive Statistical Analysis	50
3.9.3 Correlation Analysis (Pearson’s Correlation Coefficient)	51
3.9.4 Regression Analysis	51
3.10 Chapter Summary	53
CHAPTER FOUR RESULTS AND DISCUSSION	54
4.1 Introduction	54
4.2 Descriptive Statistics	55
4.2.1 Descriptive Basic Information.....	55
4.2.2 Descriptive Analysis of Each Dimension	58
4.3 Reliability and Validity.....	60
4.4 Correlation Analysis	62
4.5 Regression Analysis	63
4.5.1 Relationship between Data Quality, System Integration, Legal and Compliance, Talent and AI Adoption	64
4.5.2 Hypothesis Testing	65
CHAPTER FIVE CONCLUSION AND RECOMMENDATION	70
5.1 Introduction	70
5.2 Discussion of Research Findings	70
5.2.1 Data Quality	70
5.2.2 System Integration	71
5.2.3 Legal and Compliance Readiness	71
5.2.4 Talent Availability	72
5.2.5 Synthesis of Findings	72
5.3 Contribution and Application of Study	73
5.3.1 Theoretical Contribution	73
5.3.2 Practical Contribution and Application	74
5.4 Limitation of Study	75
5.5 Recommendations for Future Research	77
REFERENCE	81
APPENDIX A QUESTIONNAIRE	90
APPENDIX B QUESTIONNAIRE(CHINESE TRANSLATED VERSION)	95

LIST OF TABLES

Table 1.1	16
<i>Definition of Key Terms</i>	16
Table 3.1	44
<i>Measurement of Variable</i>	44
Table 3.2	48
<i>Interpretation of Cronbach's Alpha (α) Values</i>	48
Table 3.3	49
<i>Interpretation of KMO values</i>	49
Table 3.4	50
<i>P-value interpretation for Bartlett's test:</i>	50
Table 3.5	51
<i>Interpretation of r-values:</i>	51
Table 3.6	52
<i>β Coefficient (Effect Size):</i>	52
Table 3.7	52
<i>R² Value</i>	52
Table 4.1	55
<i>Demographic profile</i>	55
Table 4.2	59
<i>Basic Indicator</i>	59
Table 4.3	61
<i>Cronbach's alpha coefficient of the questionnaire as a whole</i>	61
Table 4.4	61
<i>Validity test of the questionnaire as a whole</i>	61
Table 4.5	63
<i>Correlation analysis</i>	63
Table 4.6	64
<i>Multiple Linear Regression Results Predicting AI Adoption (n = 377)</i>	64
Table 4.7	68
<i>Hypothesis result</i>	68

LIST OF FIGURES

Figure 3.1.....	36
<i>Research Framework</i>	36



LIST OF ABBREVIATIONS

AI	Artificial Intelligence
SME	Small and Medium-sized Enterprise
TOE	Technology–Organization–Environment
IQT	Information Quality Theory
HCT	Human Capital Theory
RDT	Resource Dependence Theory
NLP	Natural Language Processing
OCR	Optical Character Recognition
API	Application Programming Interface
IFRS	International Financial Reporting Standards
GAAP	Generally Accepted Accounting Principles
KMO	Kaiser-Meyer-Olkin Measure
SPSS	Statistical Package for the Social Sciences
R ²	Coefficient of Determination



UUM
Universiti Utara Malaysia

CHAPTER ONE INTRODUCTION

1.1 Background

With the rapid development of computing power and data processing technologies, artificial intelligence (AI) is becoming an important driver for the Fourth Industrial Revolution (Santana & Díaz-Fernández, 2023). Since its initial establishment as an academic field in the 1950s, AI has undergone a profound transformation from technological exploration to practical application. Currently, AI is widely used in a variety of fields such as manufacturing, healthcare, education, and human resource management, reshaping organisations' operating models and talent structures (Santana & Díaz-Fernández, 2023). AI is also transforming financial services and auditing, improving reporting accuracy, efficiency, and transparency. It is particularly prevalent among startups and high-growth firms, especially those with venture capital backing, where it is associated with higher revenue growth and scalability (Bose & Bhattacharjee, 2023). The rapid advancement of AI is transforming our world, surpassing human capabilities in tasks like image recognition, language understanding, and automation (Roser, 2022). From early developments such as Claude Shannon's 1950 Theseus system to modern deep learning models like OpenAI's GPT and Google's PaLM, AI has evolved significantly, demonstrating immense potential in fields such as programming, medical diagnosis, and autonomous driving (Yang & Huang, 2022). These advancements have also enhanced efficiency and accuracy in finance and accounting through automation, data analysis, and real-time reporting

REFERENCE

- Abdullah, A. A. H. (2024). The impact of artificial intelligence and Industry 4.0 on transforming accounting and auditing practices. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(1), 100218.
- Ahmed, S. (2024). Artificial Intelligence (AI) Technology Adoption in SME. *Artificial Intelligence (AI)*, 17(01).
- Alarefi, M. (2024). The Impact of Artificial Intelligence on Business Performance in Saudi Arabia: The Role of Technological Readiness and Data Quality. *Engineering, Technology & Applied Science Research*, 14(5), 16802-16807.
- Alharasis, E. E., & Alkhwaldi, A. F. (2024). The implementation of advanced AIS and the accounting data quality: the case of Jordanian SMEs. In *International conference on human-computer interaction* (pp. 149-173). Cham: Springer Nature Switzerland.
- Banța, V. C., Rîndașu, S. M., Tănăsie, A., & Cojocaru, D. (2022). Artificial Intelligence in the Accounting of International Businesses: A Perception-Based Approach. *Sustainability*, 14(11), 6632.
- Bin-Nashwan, S. A., Li, J. Z., Jiang, H., Bajary, A. R., & Ma'aji, M. M. (2024). Does AI adoption redefine financial reporting accuracy, auditing efficiency, and information asymmetry? An integrated model of TOE-TAM-RDT and big data governance. *Computers in Human Behavior Reports*, 17, 100572.

- Blaug, M. (1976). The empirical status of human capital theory: A slightly jaundiced survey. *Journal of economic literature*, 14(3), 827-855.
- Bougie, R., & Sekaran, U. (2019). *Research methods for business: A skill building approach*. John Wiley & Sons.
- Bose, S., Dey, S. K., & Bhattacharjee, S. (2023). Big data, data analytics and artificial intelligence in accounting: An overview. *Handbook of big data research methods*, 32-51.
- Chew, J., Shen, Z., Hu, K., Wang, Y., & Wang, Z. (2025). Artificial Intelligence Optimizes the Accounting Data Integration and Financial Risk Assessment Model of the E-commerce Platform. *International Journal of Management Science Research*, 8(2), 7-17.
- Chowdhury, E. K. (2023). Integration of artificial intelligence technology in management accounting information system: an empirical study. In *Novel financial applications of machine learning and deep learning: algorithms, product modeling, and applications* (pp. 35-46). Cham: Springer International Publishing.
- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American sociological review*, 48(2), 147-160.
- Du, P., Zhang, X., Huang, C. C., Jafari, N., Kibbe, W. A., Hou, L., & Lin, S. M. (2010). Comparison of Beta-value and M-value methods for quantifying

methylation levels by microarray analysis. *BMC bioinformatics*, 11, 1-9.

Field, A. (2024). *Discovering statistics using IBM SPSS statistics*. Sage publications limited.

George, D., & Mallery, P. (2018). Reliability analysis. In *IBM SPSS statistics 25 step by step* (pp. 249-260). Routledge.

Heo, M., Kim, N., & Faith, M. S. (2015). Statistical power as a function of Cronbach alpha of instrument questionnaire items. *BMC medical research methodology*, 15, 1-9.

Hill, B. D. (2011). The sequential Kaiser-Meyer-Olkin procedure as an alternative for determining the number of factors in common-factor analysis: A Monte Carlo simulation. Oklahoma State University.

Hussain, T., & Malik, A. (2024). Evaluating the Efficiency Gains of AIS Digital Accounting Systems in Corporate Tax Compliance. *Asian American Research Letters Journal*, 1(6).

Hoosen, K. F. Factors Influencing Artificial Intelligence Adoption in South African Organisations: A Technology, Organisation, Environment (TOE) Framework.

International Business School Suzhou, Xi'an Jiaotong-Liverpool University & CPA Australia. (2024). *Research report on the application of digital technology in accounting firms in China*. Xi'an Jiaotong-Liverpool University & CPA Australia..

- Jamal Mohammad, S., Khamees Hamad, A., Borgi, H., Anh Thu, P., Safdar Sial, M., & Abdallah Alhadidi, A. (2020). How artificial intelligence changes the future of accounting industry.
- Jauhiainen, T., & Lehner, O. M. (2022). Good governance of AI and big data processes in accounting and auditing. In *Artificial intelligence in accounting* (pp. 119-181). Routledge.
- Jackson, D., & Allen, C. (2024). Technology adoption in accounting: the role of staff perceptions and organisational context. *Journal of Accounting & Organizational Change, 20*(2), 205-227.
- Khanh, T. H. T., Rajagopal, P., Hoang, T. X., Dung, L. T. C., & Yazdani, K. (2025). Research on the Application of Blockchain Technology and Its Impact on the Effectiveness of Accounting Information Systems in Enterprises in Ho Chi Minh City. *Journal of Lifestyle and SDGs Review, 5*(2), e04693-e04693.
- KPMG. (2025). *KPMG global financial intelligence survey report*. KPMG Huazhen LLP.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement, 30*(3), 607-610
- Kothandapani, H. P. (2024). Automating financial compliance with AI: A New Era in regulatory technology (RegTech).
- Lai, M. K., Yeo, C. M. A., Tay, L. C., & Lim, K. G. (2025). Re-examining AI adoption

antecedents and its potential effect on AI sustained use in small and medium enterprises (SMEs). *Paper Asia*, 41(1b), 292–305.

Lee, C. S., & Tajudeen, F. P. (2020). Usage and impact of artificial intelligence on accounting: Evidence from Malaysian organisations. *Asian Journal of Business and Accounting*, 13(1).

Leitner-Hanetseder, S., Lehner, O. M., Eisl, C., & Forstenlechner, C. (2021). A profession in transition: actors, tasks and roles in AI-based accounting. *Journal of applied accounting research*, 22(3), 539-556.

Li, X. (2022). Exploration of Talent Training Model for Accounting Majors Using Artificial Intelligence Background. *International Journal of New Developments in Education*, 4(5).

Ministry of Finance of the People's Republic of China. (2021). *Accounting informatization development plan (2021-2025)*. Ministry of Finance, PRC.

Mukhsin, M., Renaldo, N., Junaedi, A. T., Veronica, K., & Cecilia, C. (2023). Innovative Approaches to Cloud-Based Accounting Information Systems: Integrating AI, Blockchain, and IoT. In *International Conference on Business Management and Accounting* (Vol. 2, No. 1, pp. 288-294).

Nkansah, B. K. (2018). On the Kaiser-Meier-Olkin's measure of sampling adequacy. *Mathematical theory and modeling*, 8(7), 52-76.

Odonkor, B., Kaggwa, S., Uwaoma, P. U., Hassan, A. O., & Farayola, O. A. (2024).

The impact of AI on accounting practices: A review: Exploring how artificial intelligence is transforming traditional accounting methods and financial reporting. *World Journal of Advanced Research and Reviews*, 21(1), 172-188.

Oke, J., Akinkunmi, W. B., & Etebefia, S. O. (2019). Use of correlation, tolerance and variance inflation factor for multicollinearity test. *GSJ*, 7(5), 652-659.

Rawashdeh, A. (2022). Determinants of artificial intelligence adoption in SMEs: The mediating role of accounting automation. *Rawashdeh, A., Bakhit, M & Abaalkhail, L.(2023). Determinants of artificial intelligence adoption in SMEs: The mediating role of accounting automation. International Journal of Data and Network Science*, 7(1), 25-34.

Roser, M. (2022). The brief history of artificial intelligence: the world has changed fast—what might be next?. *Our world in data*.

Roopa, S., & Rani, M. S. (2012). Questionnaire designing for a survey. *Journal of Indian Orthodontic Society*, 46(4_suppl1), 273-277.

Rowland, D. T. (2003). Demographic methods and concepts. OUP Oxford.

Santana, M., & Díaz-Fernández, M. (2023). Competencies for the artificial intelligence age: visualisation of the state of the art and future perspectives. *Review of Managerial Science*, 17(6), 1971-2004.

Sastararuji, D., Hoonsopon, D., Pitchayadol, P., & Chiwamit, P. (2021, January). Cloud Accounting Adoption in Small and Medium Enterprises: An Integrated

Conceptual Framework: Five factors of determinant were identified by integrated Technology-Organization-Environment (TOE) framework, Diffusion of Innovation (DOI), Institutional Theory (INT) and extended factors. In *2021 The 2nd International Conference on Industrial Engineering and Industrial Management* (pp. 32-38).

Saunders, L. J., Russell, R. A., & Crabb, D. P. (2012). The coefficient of determination: what determines a useful R² statistic?. *Investigative ophthalmology & visual science*, 53(11), 6830-6832.

Sedgwick, P. (2012). Pearson' s correlation coefficient. *Bmj*, 345.

Senthilnathan, S. (2019). Usefulness of correlation analysis. *Available at SSRN 3416918*.

Seethamraju, R., & Hecimovic, A. (2023). Adoption of artificial intelligence in auditing: An exploratory study. *Australian Journal of Management*, 48(4), 780-800.

Sekaran, U., & Bougie, R. (2013). *Research Methods for Business: A Skill-Building Approach* (6th ed.). Wiley

Shaanxi Provincial Department of Science and Technology. (2022, April 15). Notice on strengthening the cultivation of high-tech SMEs to promote high-quality development [In Chinese].

Shaanxi Provincial Development and Reform Commission. (2025, January 17).

Digital empowerment to promote the transformation and upgrading of SMEs in our province [In Chinese].

Shrestha, N. (2021). Factor analysis as a tool for survey analysis. *American journal of Applied Mathematics and statistics*, 9(1), 4-11.

Simina, M. M., & Dutescu, A. (2024). TOE framework elements used on Artificial Intelligence implementation in the accounting and audit sector. *International Journal of Research in Business & Social Science*, 13.

State Council of the People's Republic of China. (2017, July 8). State Council's notice on issuing the new generation artificial intelligence development plan .

State Council of the People's Republic of China. (2015, May 8). State Council notice on issuing 'Made in China 2025'.

Stenberg, L., & Nilsson, S. (2020). Factors influencing readiness of adopting AI: A qualitative study of how the TOE framework applies to AI adoption in governmental authorities.

Tornatzky Lg & Fleischer, M. (1990). The process of technological innovation.

Vale, L., Silcock, J., & Rawles, J. (1997). An economic evaluation of thrombolysis in a remote rural community. *BMJ*, 314(7080), 570.

Wang, R. Y., & Strong, D. M. (1996). Beyond accuracy: What data quality means to data consumers. *Journal of management information systems*, 12(4), 5-33.

Wong, j. w., & Yap. (2024). Factors influencing the adoption of artificial intelligence

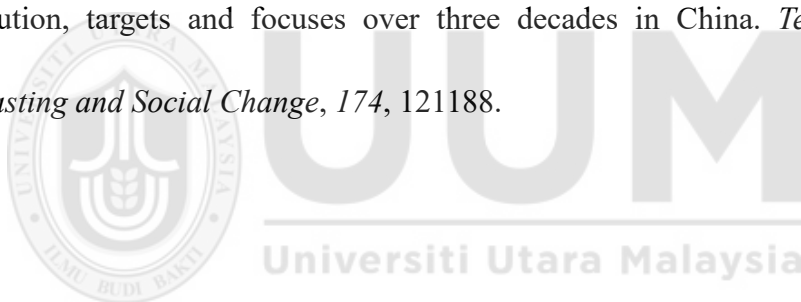
in accounting among micro, small medium enterprises (MSMEs). *Quantum Journal of Social Sciences and Humanities*, 5(1), 16-28.

Watson, R. (2015). Quantitative research. *Nursing standard*, 29(31).

Xibuwang. (2024, June 11). In 2023, the province's large-scale industries showed strong vitality. Xibuwang.

Yang, J., Blount, Y., & Amrollahi, A. (2021). Adoption of AI in the auditing practice: a case study of a big four accounting firm.

Yang, C., & Huang, C. (2022). Quantitative mapping of the evolution of AI policy distribution, targets and focuses over three decades in China. *Technological Forecasting and Social Change*, 174, 121188.



APPENDIX A QUESTIONNAIRE

Dear respondent:

I am accounting students from Tunku Intan Safinaz School of Accountancy (TISSA-UUM), College of Business, Universiti Utara Malaysia. The main objective of this study is to examine the adoption of Artificial Intelligence (AI) in the accounting departments of small and medium-sized enterprises (SMEs) in Shannxi province. Our research focuses on identifying the key factors influencing AI adoption, including data quality, system integration, compliance requirements, and the availability of interdisciplinary talent.

Currently, AI technology is transforming financial and accounting processes by enhancing automation, improving data analysis, and supporting decision-making. Thus, this questionnaire is designed to collect insights from accounting professionals and decision-makers about their experiences with AI, the challenges they encounter, and their expectations for AI-driven financial management.

I kindly request your assistance in completing this survey. All responses will be kept strictly confidential and used solely for academic research purposes. Your participation is greatly appreciated and will contribute to a deeper understanding of AI adoption in the accounting field, particularly in SMEs in Shannxi province.

Thank you for your time and support.

A: Screening Questions

Has your company already adopted AI technology in your current system?

- Yes
- No

If yes, how long has your company been using AI technology?

- Less than 1 year
- 1-3 years
- 3-5 years
- More than 5 years

B: Basic information

1. What is your age range?

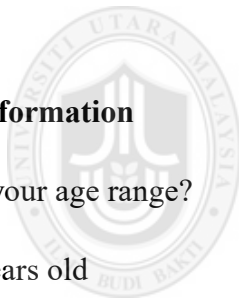
- A. 25-34 years old
- B. 35-44 years old
- C. 45 years old or above

2. What is your gender?

- A. Male
- B. Female

3. What is your education level?

- A. College
- B. Bachelor's degree



C. Graduate student and above

4. What is your position in the company?

A. Finance manager/director

B. Accountant

C. IT department staff

D. Senior management

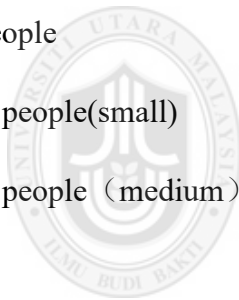
E. Other

5. What is the size of your company?

A. 10-99 people

B. 100-200 people (small)

C. 200-300 people (medium)



6. What is your company's industry sector?

A. High-tech manufacturing

B. Digital economy

C. Biotechnology & healthcare innovation

D. New energy & sustainability

E. Scientific research & education services

F. Other technology-driven sectors

7. What is your company's main market?

A. Local market (Northeast region only)

B. Domestic market (nationwide)

C: Primary questionnaire

Grading method: 1 = strongly disagree 2 = disagree 3 = uncertain 4 = agree 5 = strongly agree

Section 1: Data Quality: Ensures accuracy, completeness, consistency, and timeliness of AI-driven accounting data to enhance decision-making and compliance.

Statement	1	2	3	4	5
Our AI-enabled accounting system improves data accuracy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI enables greater data consistency and reduces errors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI is more accurate than traditional methods in generating financial reports.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI reduces manual input errors with automated data processing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI reduces duplication and improves completeness in data collation and classification.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI improves the credibility and traceability of financial data.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section 2: System Integration: Enhances AI efficiency in financial processing through seamless data interoperability, automation, security, and scalability.

Statement	1	2	3	4	5
AI requires integration with traditional financial systems, and compatibility is a key challenge.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI adoption requires a large initial investment, which is a challenge for businesses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI enhances the security and regulatory compliance of financial data.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI needs to integrate seamlessly with multiple systems to increase the value of enterprise applications.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI's integration in finance, human resources and supply chain management affects the user experience.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI reduces financial data processing time and improves efficiency by automating processes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section 3: Legal and Compliance: Ensures AI-driven accounting adheres to regulations, protects data privacy, controls algorithmic bias, and enhances audit transparency.

Statement	1	2	3	4	5
Policy support and regulatory requirements have a direct impact on AI adoption.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI makes financial compliance checks more efficient and accurate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI is being used increasingly for tax compliance and report generation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI improves the adaptability of enterprises to industry regulatory requirements.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI improves compliance in terms of traceability and transparency of financial data.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section 4: Talent: Develops finance professionals with AI, data analytics, cybersecurity, and legal expertise to drive effective and responsible AI adoption.

Statement	1	2	3	4	5
AI training and employee skills development affect the effectiveness of enterprise AI adoption.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI adoption success depends on the internal talent pool and training.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regular training and talent development are crucial to AI adoption.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The speed of AI adoption depends on the adaptability of enterprise employees to new technologies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section 5: AI adoption: The integration of AI into accounting enhances efficiency, data processing, and decision-making.

Statement	1	2	3	4	5
Our company plans to adopt AI for financial management in the next 1-2 years.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our company is already using AI technology for financial management.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pressure from competitors in the industry is driving companies to adopt AI technology more quickly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Companies are having difficulty adopting AI due to the high initial investment costs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI makes financial data processing and analysis more efficient.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI adoption leads to more data-driven decision-making in businesses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

APPENDIX B QUESTIONNAIRE(CHINESE TRANSLATED VERSION)

亲爱的答复者：

我是马来西亚北方大学（UUM）商学院 Tunku Intan Safinaz 会计学院（TISSA-UUM）的会计专业学生。本研究的主要目的是考察中国陕西地区科技型中小型企业（SMEs）会计部门采用人工智能（AI）的情况。我们的研究重点是找出影响人工智能应用的关键因素，包括数据质量、系统集成、合规要求和跨学科人才的可用性。

目前，人工智能技术正在通过提高自动化程度、改进数据分析和支持决策来改变财务和会计流程。因此，本问卷旨在收集会计专业人员和决策者对人工智能的使用经验、遇到的挑战以及对人工智能驱动的财务管理的期望。

请协助完成本调查。所有回答将严格保密，仅用于学术研究目的。非常感谢您的参与，这将有助于我们更深入地了解人工智能在会计领域的应用，尤其是在中国陕西地区的中小企业。

感谢您的时间和支持。

筛选问题

贵公司目前的系统是否已经采用了人工智能技术？

- 是
- 没有

如果回答为 "是"，贵公司使用人工智能技术已有多长时间？

- 少于 1 年
- 1-3 年
- 3-5 年
- 5 年以上

基本信息

1.您的年龄范围是多少？

- A.25-34 岁
- B.35-44 岁
- C.45 岁或以上

2.你的性别是？

- A.男性
- B.女性

3.您的教育水平如何？

- A.学院
- B.学士学位



C.研究生及以上

4.您在公司的职位是什么？

A.财务经理/主任

B.会计

C.信息技术部门工作人员

D.高级管理层

E.其他

5.贵公司的规模有多大？

A.10-99 人

B.100-200 人（小型）

C.200-300 人（中型）



UUM
Universiti Utara Malaysia

6.贵公司属于哪个行业？

A.高科技制造业

B.数字经济

C.生物技术和医疗保健创新

D.新能源与可持续发展

E.科学研究与教育服务

F.其他技术驱动型部门

7.贵公司的主要市场是哪里？

C. 当地市场（仅限东北地区）

D. 国内市场（全国）

主要问题

评分方法： 1 = 非常不同意 2 = 不同意 3 = 不确定 4 = 同意 5 = 非常同意

第 1 部分：数据质量： 确保人工智能驱动的会计数据的准确性、完整性、一致性和及时性，以加强决策和合规性。

声明	1	2	3	4	5
我们的人工智能会计系统提高了数据的准确性。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
人工智能可提高数据一致性并减少错误。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
在生成财务报告方面，人工智能比传统方法更准确。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
人工智能通过自动数据处理减少人工输入错误。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
在数据整理和分类方面，人工智能减少了重复，提高了完整性。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
人工智能提高了财务数据的可信度和可追溯性。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

第 2 部分：系统集成： 通过无缝数据互操作性、自动化、安全性和可扩展性，提高人工智能在财务处理方面的效率。

声明	1	2	3	4	5
人工智能需要与传统金融系统集成，兼容性是一个关键挑战。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
采用人工智能需要大量的初始投资，这对企业来说是一个挑战。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
人工智能增强了金融数据的安全性和合规性。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
人工智能需要与多个系统无缝集成，以提高企业应用的价值。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
人工智能与财务、人力资源和供应链管理的融合影响着用户体验。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
人工智能通过自动化流程缩短了财务数据处理时间并提高了效率。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

第 3 部分：法律与合规：确保人工智能驱动的会计工作遵守法规、保护数据隐私、控制算法偏差并提高审计透明度。

声明	1	2	3	4	5
政策支持和监管要求对人工智能的采用有直接影响。	○	○	○	○	○
人工智能让财务合规检查更高效、更准确。	○	○	○	○	○
人工智能正越来越多地用于税务合规和报告生成。	○	○	○	○	○
人工智能提高了企业对行业监管要求的适应性。	○	○	○	○	○
在财务数据的可追溯性和透明度方面，人工智能提高了合规性。	○	○	○	○	○

第 4 部分：人才：培养具备人工智能、数据分析、网络安全和法律专业知识的金融专业人才，推动有效、负责任地采用人工智能。

声明	1	2	3	4	5
人工智能培训和员工技能发展会影响企业采用人工智能的效果。	○	○	○	○	○
人工智能的成功应用取决于内部人才库和培训。	○	○	○	○	○
定期培训和人才培养对采用人工智能至关重要。	○	○	○	○	○
采用人工智能的速度取决于企业员工对新技术的适应能力。	○	○	○	○	○

第 5 节：采用人工智能：将人工智能融入会计工作可提高效率、数据处理和决策能力。

声明	1	2	3	4	5
我们公司计划在未来 1-2 年内采用人工智能进行财务管理。	○	○	○	○	○
我们公司已经将人工智能技术用于财务管理。	○	○	○	○	○
来自行业竞争对手的压力促使企业更快地采用人工智能技术。	○	○	○	○	○
由于初始投资成本高昂，企业很难采用人工智能。	○	○	○	○	○
人工智能提高了金融数据处理和分析的效率。	○	○	○	○	○
人工智能的采用使企业的决策更加数据化。	○	○	○	○	○