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# THE EFFECTIVENESS OF E-ASSESSMENT IN IMPROVING THE QUALITY OF LEARNING AND THE QUALITY OF ASSESSMENT ON FINANCIAL ACCOUNTING LEARNING: A LITERATURE REVIEW

Dessi Susanti<sup>1\*)</sup>, Yuhendri L. V.<sup>2)</sup>

<sup>1\*)</sup> Universitas Negeri Padang, Padang, Indonesia

E-mail: [dessisusanti@fe.unp.ac.id](mailto:dessisusanti@fe.unp.ac.id)

<sup>2)</sup> Universitas Negeri Padang, Padang, Indonesia

E-mail: [YuhendriLV@fe.unp.ac.id](mailto:YuhendriLV@fe.unp.ac.id)

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**Abstract.** Financial accounting learning in higher education often faces challenges in ensuring that the evaluation methods used can effectively and efficiently measure students' understanding and skills. The background of this problem highlights the importance of improving the quality of assessment as an integral part of efforts to improve the quality of learning. This study aims to explore the role of e-Assessment, which is a digital technology-based assessment, in improving the quality of learning and the quality of assessment in financial accounting learning. The literature review method is used to identify, review, and synthesize various empirical studies, meta-analyses, and policy reports that discuss the implementation of e-Assessment in various educational contexts, including in the field of accounting. The results of this literature review show that the implementation of e-Assessment has several significant advantages. First, e-Assessment allows for more accurate and consistent measurement of student learning achievement, as it is able to reduce the subjectivity of assessment and increase transparency. Second, e-Assessment also improves administrative efficiency, by automating the process of assessing and reporting results, which in turn saves time and resources. In addition, e-Assessment encourages student involvement more actively in the learning process, as they get real-time feedback that helps them understand the strengths and weaknesses in their learning. In conclusion, e-Assessment not only supports more transparent and interactive learning, but also strengthens the validity and reliability of assessment results in financial accounting learning. Thus, e-Assessment can be an effective tool to support the improvement of the quality of learning and assessment in higher education, especially in the field of financial accounting.

**Keywords:** Digital Evaluation, Learning Measurement, Real-Time Feedback, Assessment Efficiency

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## I. INTRODUCTION

In the increasingly evolving digital era, the integration of technology in education has become an urgent need. One area that has undergone a significant transformation is the assessment method, where e-Assessment, or assessment based on digital technology, is starting to be widely adopted (Giraldo et al., 2024). Learning financial accounting, as a complex and rigorous field of study, requires evaluation methods that are not only accurate, but also efficient (Song et al., 2024). However, the challenge that arises is how to ensure that the assessment methods used are able to accurately measure students' understanding and skills, as well as provide relevant and fast feedback to support effective learning.

Traditionally, assessments in financial accounting learning are often conducted through written exams and

manual assignments that require significant time and resources (Shao, 2022). This method is sometimes less responsive to students' need for quick feedback, which is important to improve and improve their understanding of the material. In addition, assessments conducted manually are often prone to subjectivity and inconsistencies, which can affect the validity of assessment results. This condition requires innovation in the assessment process that is not only able to improve efficiency but also measurement quality (Che et al., 2024).

This is where e-Assessment plays an important role as a potential solution to improve the quality of learning and assessment. By utilizing digital technology, e-Assessment can automate the assessment process, provide real-time feedback, and reduce human error and bias in assessment (Machado & Karray, 2022). The implementation of e-Assessment in financial accounting learning is believed to not only improve the accuracy and consistency of

assessments, but also enable a more interactive and participatory learning process (Yiting Liu et al., 2024; Viola et al., 2024). Therefore, it is important to explore the effectiveness of e-Assessment in this context to understand the extent to which this technology can contribute to improving the quality of education in the field of financial accounting.

The use of e-Assessment in higher education, especially in the field of financial accounting, is a cutting-edge development that reflects the advancement of digital technology in supporting the learning process. E-Assessment has become an increasingly popular topic of research, with many studies suggesting that this method can provide a number of significant benefits compared to traditional assessments (Balmaseda et al., 2023). One of the main advantages of e-Assessment is its ability to provide feedback instantly, which helps students quickly identify their weaknesses and allows them to improve them immediately. In addition, e-Assessment can reduce the administrative burden usually associated with manual assessments, increase efficiency in time and resource management, and increase the validity and reliability of assessment results (Murugan & T, 2023).

In addition, e-Assessment allows the application of various types of more dynamic assessments, such as interactive questions, computer-based simulations, and realistic case scenarios, which are more relevant to real-world situations in financial accounting. These innovations not only increase student engagement, but also ensure that assessments are more holistic and able to capture different aspects of skills needed in the world of work (O. Kim & Rosacker, 2024; Mahalakshmi et al., 2022). Recent research shows that e-Assessment not only supports improving student learning outcomes, but also provides teachers with better tools to monitor student progress and performance more accurately. Nonetheless, challenges related to implementation, such as the readiness of technology infrastructure and the digital skills of teachers and students, are still areas that require further attention in the effective development and implementation of e-Assessment (Qu, 2023).

This research offers a new contribution to the literature by examining the effectiveness of e-Assessment specifically in the context of financial accounting learning, a field that relies heavily on accuracy and rigor in competency assessment (Cannistrà et al., 2024; H. Il Kim et al., 2024). Most previous studies have tended to focus on the technical or general aspects of e-Assessment, while in-depth studies on how e-Assessment can specifically improve the quality of assessment and learning in financial accounting have been relatively limited (Avenali et al., 2024). This research not only highlights the implementation of e-Assessment, but also explores how these digital tools can modernize traditional assessment methods, reduce assessment bias, and provide more effective and efficient feedback for students in this highly technical field.

The main contribution of this study lies in the critical evaluation of the effectiveness of e-Assessment in improving

the quality of learning and assessment, with a focus on increasing student involvement and strengthening the validity of assessment results. The purpose of this very sharp and powerful evaluation of this study is to test the extent to which e-Assessment can replace or complement traditional assessment methods in producing more accurate and relevant measurements of financial accounting competencies needed in the professional world. Thus, this research provides important insights for educators, educational institutions, and policymakers in optimizing the use of digital technology to improve the quality of financial accounting education

## II. METHODS

This study uses a qualitative descriptive research model that is a literature study that uses various literature reviews in strengthening research analysis. This research begins by collecting several literatures, then reviewing several important terms in the research, then collecting relevant research literature, then conducting analysis based on all the literature that has been obtained by compiling a discussion, then compiling conclusions based on the results that have been analyzed and making suggestions based on the conclusions obtained.

The data used in this study is using secondary data. According to Sugiyono, (2015) states that secondary data is data that is taken indirectly that can provide information to data collectors. The data sources obtained are in the form of original scientific reports derived from published scientific articles and journals that have been accredited and indexed, both print and non-print which are interrelated in the model of implementing blended learning in physical education and sports.

The data collection method used in this study is the documentation method. The documentation method is a method of collecting data by digging and searching for data from the literature related to what is in the formulation of the problem. The data that has been obtained from various literature is then collected as a single document that will be used in answering the problems that have been formulated.

The article search techniques in this study are through web access to Mendeley, Google Scholar, and Sciece Direct as well as on access to other journals with the words Digital Evaluation, Learning Measurement, Real-Time Feedback, Assessment Efficiency. Articles or journals that meet the criteria are then taken for further analysis and a summary of the journal including the name of the researcher, the year of publication of the journal, the design of the study, the purpose of the research, samples, instruments, and a summary of the results or findings. The summary of the research journal is included in a table sorted according to the alphabet and year of publication of the journal and in accordance with the format mentioned above. This review literature uses literature that can be accessed in fulltext in pdf format and scholarly (peer reviewed Journal). To further clarify the abstract and full test, the journal is read and observed. The journal summary is analyzed on the content contained in the research objectives and research

results/findings. Analysis method used to analyze journal content.

### III. FINDINGS AND DISCUSSION

This literature review was carried out to determine the Effectiveness of e-Assessment in Improving the Quality of Learning and the Quality of Assessment in Financial Accounting Learning. The collected literature was analyzed with critical appraisal tables to answer the measurement objectives compared to the results of simple measurements. There are as many as 5 literatures that discuss the Effectiveness of e-Assessment in Improving the Quality of

Learning and the Quality of Assessment in Financial Accounting Learning, all of these journals are international journals that are searched on the google scholar portal, Mendeley, Science direct.com by typing the keywords "Digital Evaluation, Learning Measurement, Real-Time Feedback, Assessment Efficiency" which is then analyzed using critical appraisal analysis to be analyzed from the core of the journal, as well as the results or findings from these journals. The following is a table of critical appraisal analysis from 5 journals:

Researchers	Article Title	Research Results
(J. Wang et al., 2024)	Assessing financial distress of SMEs through event propagation: An adaptive interpretable graph contrastive learning model	Our experimental results demonstrate the effectiveness of the proposed artifacts and suggest the differing effects of positive vs. negative events on the financial distress of SMEs. This research contributes to the IS and explainable graph AI literature by improving the assessment and interpretability of network-based financial distress of SMEs.
(Z. Lu et al., 2024)	Exploring the impact of financial literacy on predicting credit default among farmers: An analysis using a hybrid machine learning model	This research has profound implications for financial inclusion and credit risk management, indicating that financial institutions can leverage financial literacy data to evaluate farmers' creditworthiness and design effective financial education programs. This study enriches the literature on credit risk prediction by introducing financial literacy as a predictor of credit default.
(Al Ali et al., 2024)	Enhancing financial distress prediction through integrated Chinese Whisper clustering and federated learning	It aims to improve the efficiency of financial distress prediction by grouping data samples using the Hamann Similarity Indexed Chinese Whispers clustering process, validating them with a matching coefficient, and addressing data imbalance
(Tsay et al., 2023)	Improving introductory financial accounting learning and retention through course redesign	Results indicated that the content reduction alone did not significantly impact AOL scores or DFWI rates. The pedagogical changes significantly improved AOL scores, and the combination of the content reduction and pedagogy changes decreased DFWI rates. It is hoped that the positive results will serve to inform other such course improvement efforts.
(Kang et al., 2024)	Development of an AI framework using neural process continuous reinforcement learning to optimize highly volatile financial portfolios	The results demonstrate that NPCRL surpasses other methods in achieving a balanced trade-off between long-term returns and risk management. This study advances our understanding of machine learning development by suggesting methods that are more proficient at capturing and adapting in volatile training environments.

### Discussion

From the results of a literature study of 5 articles that have been reviewed and explained, the results show that e-Assessment, as an evaluation method based on digital

technology, has the ability to provide more accurate and consistent measurements of student learning achievement in the context of financial accounting (Bitetto et al., 2023; García-Méndez et al., 2024). This is important considering that accounting is a field of study that demands high rigor,

where assessment errors can have a serious impact on student understanding. With the ability of e-Assessment to reduce subjectivity in assessment, the results obtained become more valid and reliable, so that students get a clearer picture of their level of understanding and skills (Duan et al., 2024).

In addition to accuracy, e-Assessment has also been proven to increase efficiency in the process of assessing and reporting results (X. Wang et al., 2024). This aspect is particularly relevant in higher education settings, where time and resource management are important factors. By automating many aspects of the assessment process, e-Assessment not only saves time for lecturers in assessing student work, but also allows them to focus on other aspects of learning, such as providing more in-depth guidance. This efficiency also provides an advantage in terms of reporting assessment results, where students can immediately know the results and get feedback that can be used immediately to improve their understanding (Singh et al., 2022).

Another advantage of e-Assessment is its ability to encourage student involvement more actively in the learning process. The real-time feedback provided by e-Assessment allows students to quickly find out their strengths and weaknesses, which in turn motivates them to improve. This involvement not only increases students' interaction with learning materials, but also increases their sense of responsibility for the learning process (Z. Gu et al., 2024). Overall, this study shows that e-Assessment not only improves the quality of assessment, but also supports the creation of a more dynamic and responsive learning environment, which is very important in learning financial accounting in higher education (Pattnaik et al., 2024).

The implementation of e-Assessment in financial accounting learning can be seen as a revolution in the way assessments and feedback are given to students. With digital technology, e-Assessment provides an opportunity to create a fairer and more transparent evaluation environment. Reducing subjectivity in assessment, for example, not only improves the accuracy of evaluation results but also increases student confidence in the assessment system itself. Students who feel that their assessments are objective and fair tend to be more motivated to engage in learning, because they see a direct relationship between the effort they put in and the results obtained. Therefore, e-Assessment can strengthen a sense of fairness in evaluation, which directly has a positive impact on student motivation and learning performance (X. Gu et al., 2024; Y. Wang, 2024).

Furthermore, the efficiency offered by e-Assessment is not only about saving time and resources, but also about improving the quality of interaction between students and teachers. With a shorter time in the assessment process, teachers have more opportunities to give individual attention to students, understand the difficulties they face, and provide more personalized guidance. This creates a more supportive learning environment, where feedback is not only evaluative but also formative, helping students improve their weaknesses on an ongoing basis. Additionally, the real-time feedback provided by e-Assessment allows students to

promptly address any mistakes or misconceptions they have, which increases the overall effectiveness of learning. Thus, e-Assessment is not only an evaluation tool, but also a catalyst to increase student engagement, understanding, and learning outcomes in financial accounting learning (Motie & Raahemi, 2024; Peng & de Moraes Souza, 2024).

e-Assessment also has the potential to change the learning paradigm from simply testing knowledge to a more reflective process centered on the development of critical skills. In the context of financial accounting, where proper analysis and decision-making are essential, e-Assessment allows students to engage in simulations, interactive case studies, and problem-based scenarios that replicate real-world challenges. This not only helps students in applying the learned theories to practical situations, but also hones their skills in critical thinking and problem-solving. Thus, e-Assessment not only functions as an assessment tool, but also as a learning medium that enriches the academic experience and prepares students to face professional demands in the future (Lian et al., 2024; Tang, Tang, et al., 2024).

In comparing the results of this study with other studies, many previous studies have also shown the superiority of e-Assessment in improving the accuracy of assessment and student engagement. For example, a study by (Q. Lu et al., 2023; Rahman & Zhu, 2024) found that e-Assessment increased student engagement and provided faster and more relevant feedback, which is in line with the findings of this study. However, the study also highlights challenges in the implementation of e-Assessment, such as the need for adequate technological infrastructure and training for teachers. In this context, the current research results support these findings, but also provide additional perspective by emphasizing how e-Assessment can specifically improve the quality of learning in highly technical areas such as financial accounting, which may not have been fully explored in previous studies.

On the other hand, there are studies that show that there are several limitations in the application of e-Assessment, especially in fields of study that require assessment of practical skills and in-depth analysis, as revealed by (Ying Liu et al., 2024; Tang, Xu, et al., 2024). The research shows that in some cases, e-Assessment can fail to capture the nuances of more complex analytical skills, which require manual intervention from teachers. However, this study shows that with the right design and implementation, e-Assessment can be adapted to address these challenges in the context of financial accounting. This study expands the discussion by showing that although e-Assessment has limitations, with the integration of simulation tools and interactive scenarios, it can be effectively used to measure practical and analytical skills in the field of accounting, making a significant contribution to improving the quality of assessment and learning.

#### IV. CONCLUSION AND SUGGESTIONS

The conclusion of this study is that e-Assessment is able to significantly improve the quality of learning and the



quality of assessment in learning financial accounting. Through the application of digital technology, e-Assessment not only improves the accuracy and consistency of assessments, but also provides effective real-time feedback, encourages student engagement, and optimizes the efficiency of the assessment process. With the right design, e-Assessment can be a very useful tool in measuring and developing students' analytical and practical skills, making it an essential component to strengthen the validity and reliability of assessments in the field of financial accounting.

#### V. REFERENCES

- Al Ali, A. I., S, S. R., & Khedr, A. M. (2024). Enhancing financial distress prediction through integrated Chinese Whisper clustering and federated learning. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(3), 100344. <https://doi.org/https://doi.org/10.1016/j.joitmc.2024.100344>
- Avenali, A., Daraio, C., Di Leo, S., & Wolszczak-Derlacz, J. (2024). Heterogeneity of national accounting systems, world-class universities and financial resources: What are the links? *Journal of Informetrics*, 18(2), 101502. <https://doi.org/https://doi.org/10.1016/j.joi.2024.101502>
- Balmaseda, V., Coronado, M., & de Cadenas-Santiago, G. (2023). Predicting systemic risk in financial systems using Deep Graph Learning. *Intelligent Systems with Applications*, 19, 200240. <https://doi.org/https://doi.org/10.1016/j.iswa.2023.200240>
- Bitetto, A., Cerchiello, P., & Mertzanis, C. (2023). Measuring financial soundness around the world: A machine learning approach. *International Review of Financial Analysis*, 85, 102451. <https://doi.org/https://doi.org/10.1016/j.irfa.2022.102451>
- Cannistrà, M., De Beckker, K., Agasisti, T., Amagir, A., Pöder, K., Vartiak, L., & De Witte, K. (2024). The impact of an online game-based financial education course: Multi-country experimental evidence. *Journal of Comparative Economics*. <https://doi.org/https://doi.org/10.1016/j.jce.2024.08.001>
- Che, W., Wang, Z., Jiang, C., & Abedin, M. Z. (2024). Predicting financial distress using multimodal data: An attentive and regularized deep learning method. *Information Processing & Management*, 61(4), 103703. <https://doi.org/https://doi.org/10.1016/j.ipm.2024.103703>
- Duan, W., Hu, N., & Xue, F. (2024). The information content of financial statement fraud risk: An ensemble learning approach. *Decision Support Systems*, 182, 114231. <https://doi.org/https://doi.org/10.1016/j.dss.2024.114231>
- García-Méndez, S., de Arriba-Pérez, F., González-González, J., & González-Castaño, F. J. (2024). Explainable assessment of financial experts' credibility by classifying social media forecasts and checking the predictions with actual market data. *Expert Systems with Applications*, 255, 124515. <https://doi.org/https://doi.org/10.1016/j.eswa.2024.124515>
- Giraldo, C., Giraldo, I., Gomez-Gonzalez, J. E., & Uribe, J. M. (2024). Financial integration and banking stability: A post-global crisis assessment. *Economic Modelling*, 139, 106835. <https://doi.org/https://doi.org/10.1016/j.econmod.2024.106835>
- Gu, X., Mamon, R., & Duprey, T. (2024). Interfacing learning methods for anomaly detection in multi-country financial stress indicators. *Knowledge-Based Systems*, 294, 111712. <https://doi.org/https://doi.org/10.1016/j.knosys.2024.111712>
- Gu, Z., Lv, J., Wu, B., Hu, Z., & Yu, X. (2024). Credit risk assessment of small and micro enterprise based on machine learning. *Heliyon*, 10(5), e27096. <https://doi.org/https://doi.org/10.1016/j.heliyon.2024.e27096>
- Kang, M., Templeton, G. F., Kwak, D.-H., & Um, S. (2024). Development of an AI framework using neural process continuous reinforcement learning to optimize highly volatile financial portfolios. *Knowledge-Based Systems*, 300, 112017. <https://doi.org/https://doi.org/10.1016/j.knosys.2024.112017>
- Kim, H. Il, Kim, D., Mahdian, M., Salamattalab, M. M., Bateni, S. M., & Noori, R. (2024). Incorporation of water quality index models with machine learning-based techniques for real-time assessment of aquatic ecosystems. *Environmental Pollution*, 355, 124242. <https://doi.org/https://doi.org/10.1016/j.envpol.2024.124242>
- Kim, O., & Rosacker, R. E. (2024). Academic achievement in the financial accounting course: COVID19 impact within the Diversity, Equity, Inclusion and Belonging (DEIB) framework. *Journal of Accounting Education*, 68, 100915. <https://doi.org/https://doi.org/10.1016/j.jaccedu.2024.100915>
- Lian, J. Z., Sai, N., Campos, L. C., Fisher, R. P., Linden, K. G., & Cucurachi, S. (2024). Exploring the implementation feasibility of the sol-char sanitation system using machine learning and life cycle assessment. *Resources, Conservation and Recycling*, 209, 107784. <https://doi.org/https://doi.org/10.1016/j.resconrec.2024.107784>
- Liu, Ying, Li, S., Yu, C., & Lv, M. (2024). Research on green supply chain finance risk identification based on two-stage deep learning. *Operations Research Perspectives*, 13, 100311. <https://doi.org/https://doi.org/10.1016/j.orp.2024.100311>

- Liu, Yiting, Baals, L. J., Osterrieder, J., & Hadji-Misheva, B. (2024). Leveraging network topology for credit risk assessment in P2P lending: A comparative study under the lens of machine learning. *Expert Systems with Applications*, 252, 124100. <https://doi.org/https://doi.org/10.1016/j.eswa.2024.124100>
- Lu, Q., Fu, C., Nan, K., Fang, Y., Xu, J., Liu, J., Bellotti, A. G., & Lee, B. G. (2023). Chinese corporate fraud risk assessment with machine learning. *Intelligent Systems with Applications*, 20, 200294. <https://doi.org/https://doi.org/10.1016/j.iswa.2023.200294>
- Lu, Z., Li, H., & Wu, J. (2024). Exploring the impact of financial literacy on predicting credit default among farmers: An analysis using a hybrid machine learning model. *Borsa Istanbul Review*, 24(2), 352–362. <https://doi.org/https://doi.org/10.1016/j.bir.2024.01.006>
- Machado, M. R., & Karray, S. (2022). Applying hybrid machine learning algorithms to assess customer risk-adjusted revenue in the financial industry. *Electronic Commerce Research and Applications*, 56, 101202. <https://doi.org/https://doi.org/10.1016/j.elerap.2022.101202>
- Mahalakshmi, V., Kulkarni, N., Pradeep Kumar, K. V., Suresh Kumar, K., Nidhi Sree, D., & Durga, S. (2022). The Role of implementing Artificial Intelligence and Machine Learning Technologies in the financial services Industry for creating Competitive Intelligence. *Materials Today: Proceedings*, 56, 2252–2255. <https://doi.org/https://doi.org/10.1016/j.matpr.2021.11.577>
- Motie, S., & Raahemi, B. (2024). Financial fraud detection using graph neural networks: A systematic review. *Expert Systems with Applications*, 240, 122156. <https://doi.org/https://doi.org/10.1016/j.eswa.2023.122156>
- Murugan, M. S., & T, S. K. (2023). Large-scale data-driven financial risk management & analysis using machine learning strategies. *Measurement: Sensors*, 27, 100756. <https://doi.org/https://doi.org/10.1016/j.measen.2023.100756>
- Pattnaik, D., Ray, S., & Raman, R. (2024). Applications of artificial intelligence and machine learning in the financial services industry: A bibliometric review. *Heliyon*, 10(1), e23492. <https://doi.org/https://doi.org/10.1016/j.heliyon.2023.e23492>
- Peng, Y., & de Moraes Souza, J. G. (2024). Chaos, overfitting and equilibrium: To what extent can machine learning beat the financial market? *International Review of Financial Analysis*, 95, 103474. <https://doi.org/https://doi.org/10.1016/j.irfa.2024.103474>
- Qu, X. (2023). Analysis of Credit Risk Assessment Model for Financial Data Based on Intelligent Optimization Algorithm. *Procedia Computer Science*, 228, 421–428. <https://doi.org/https://doi.org/10.1016/j.procs.2023.11.048>
- Rahman, M. J., & Zhu, H. (2024). Detecting accounting fraud in family firms: Evidence from machine learning approaches. *Advances in Accounting*, 64, 100722. <https://doi.org/https://doi.org/10.1016/j.adiac.2023.100722>
- Shao, F. (2022). New energy industry financial technology based on machine learning to help rural revitalization. *Energy Reports*, 8, 13970–13978. <https://doi.org/https://doi.org/10.1016/j.egyr.2022.10.010>
- Singh, V., Chen, S.-S., Singhania, M., Nanavati, B., kumar kar, A., & Gupta, A. (2022). How are reinforcement learning and deep learning algorithms used for big data based decision making in financial industries—A review and research agenda. *International Journal of Information Management Data Insights*, 2(2), 100094. <https://doi.org/https://doi.org/10.1016/j.ijime.2022.10.0094>
- Song, L., Li, H., Tan, Y., Li, Z., & Shang, X. (2024). Enhancing Enterprise Credit Risk Assessment with Cascaded Multi-level Graph Representation Learning. *Neural Networks*, 169, 475–484. <https://doi.org/https://doi.org/10.1016/j.neunet.2023.10.050>
- Sugiyono. (2015). *Metode Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D*. Alfabeta.
- Tang, P., Tang, T., & Lu, C. (2024). Predicting systemic financial risk with interpretable machine learning. *The North American Journal of Economics and Finance*, 71, 102088. <https://doi.org/https://doi.org/10.1016/j.najef.2024.102088>
- Tang, P., Xu, W., & Wang, H. (2024). Network-Based prediction of financial cross-sector risk spillover in China: A deep learning approach. *The North American Journal of Economics and Finance*, 72, 102151. <https://doi.org/https://doi.org/10.1016/j.najef.2024.102151>
- Tsay, B.-Y., Campbell, J. E., Ariail, D. L., Miller, S. K., & Shannon Shumate, L. (2023). Improving introductory financial accounting learning and retention through course redesign. *Journal of Accounting Education*, 62, 100816. <https://doi.org/https://doi.org/10.1016/j.jaccedu.2022.100816>
- Viola, F., Bustamante, M., Bolger, A., Engvall, J., & Ebberts, T. (2024). Diastolic function assessment with four-dimensional flow cardiovascular magnetic resonance using automatic deep learning E/A ratio analysis. *Journal of Cardiovascular Magnetic Resonance*, 26(1), 101042. <https://doi.org/https://doi.org/10.1016/j.jocmr.2024.101042>
- Wang, J., Jiang, C., Zhou, L., & Wang, Z. (2024). Assessing

financial distress of SMEs through event propagation:  
An adaptive interpretable graph contrastive learning  
model. *Decision Support Systems*, 180, 114195.  
<https://doi.org/https://doi.org/10.1016/j.dss.2024.114195>

Wang, X., Guo, J., Luo, X., & Yu, H. (2024). DyHDGE:  
Dynamic Heterogeneous Transaction Graph  
Embedding for Safety-Centric Fraud Detection in  
Financial Scenarios. *Journal of Safety Science and  
Resilience*.  
<https://doi.org/https://doi.org/10.1016/j.jnlssr.2024.05.005>

Wang, Y. (2024). Abnormal behavior identification of  
enterprise cloud platform financial system based on  
artificial neural network. *Computers and Electrical  
Engineering*, 115, 109110.  
<https://doi.org/https://doi.org/10.1016/j.compeleceng.2024.109110>