Unit 2 Seminar Preparation

Workshop Activity - Review Paper by

Review the paper Spears & Barki (2010) article then prepare answers to the following questions:

a. How did the authors use both Qualitative and Quantitative assessment approaches? What benefits did each approach yield?
b. In what ways can AI-powered data analytics enhance risk prediction and support business continuity in a dynamic corporate environment?
c. Why is it important for businesses to integrate multiple AI technologies, beyond just NLP, into their risk management strategies?

You should demonstrate that you understand the topic covered and ensure you use references to academic literature (including journals, books, and reports). This activity will provide evidence of your personal growth and is a component of the e-portfolio, which you can submit at the end of the module.

1. **How did the authors use both Qualitative and Quantitative assessment approaches? What benefits did each approach yield?**

Approach	How Spears & Barki (2010) used the approach	Benefits
Qualitative	Semi-structured interviews with 11 informants across 5 organisations to explore user participation activities, roles, and outcomes.	• Provided rich contextual insights that enabled theory-building. • Generated categories and constructs used to develop the survey instrument.
Quantitative	Survey of 228 ISACA members, with items developed from the qualitative findings, analysed using statistical methods.	• Produced measurable and generalisable evidence of relationships. • Enabled statistical testing and validation of the proposed model.
Mixed method	The qualitative results were used to build the survey instrument, and the subsequent quantitative survey tested and validated the model.	• Combining both phases allowed findings to be validated from multiple angles. • Strengthened the credibility and robustness of overall conclusions.

2. In what ways can AI-powered data analytics enhance risk prediction and support business continuity in a dynamic corporate environment?

AI could potentially substitute for users in structured, repetitive, or data-driven tasks such as:

1. **Risk prediction using data analytics**: AI can process large volumes of logs, transactions, and historical breaches to identify patterns of vulnerability much faster than humans.
2. **Control testing and monitoring**: AI tools can continuously test access controls, segregation of duties, and anomaly detection in real time, flagging weaknesses automatically.
3. **Remediation tracking: once a control fails**: AI could propose or even implement remediation steps based on pre-defined rules or past fixes.
4. **Routine compliance reporting**: AI could generate compliance evidence and documentation without requiring manual user input.

However, Spears & Barki highlight that user input is not only technical but cognitive and contextual:

- **Business process knowledge**: AI does not inherently understand the *why* and *how* of business activities. Users know the organisational context, workflows, and trade-offs.
- **Risk tolerance decisions**: Setting acceptable levels of risk is ultimately a managerial and ethical judgment, not a purely data-driven calculation.
- **Cultural accountability**: New roles like process owners and data stewards foster responsibility and engagement across the business, something AI cannot replicate.

3. Why is it important for businesses to integrate multiple AI technologies, beyond just NLP, into their risk management strategies?

- NLP is powerful for analysing unstructured textual data such as policies, reports, and incident logs (Kalogiannidis et al., 2024). However, many organisational risks are numerical, behavioural, or image- and sensor-based, which NLP alone cannot capture. Addressing these risks requires other AI techniques, such as computer vision for image-based hazards and sensor-driven analytics for real-time monitoring (Yazdi et al., 2024).
- NLP typically works on static text, while other AI methods such as anomaly detection and predictive analytics can process real-time signals like transaction flows or network traffic, enabling dynamic risk monitoring (Yazdi et al., 2024; Rao, 2025).
- Relying only on NLP risks bias toward text-heavy domains because NLP systems are prone to encoding and amplifying biases present in their training data—such as demographic, cultural, or representational disparities—which undermines the fairness and comprehensiveness of risk assessments (Hovy, 2021).

References

Hovy, D. and Prabhumoye, S (2021) 'Five sources of bias in natural language processing', *Language and Linguistics Compass*, 15(8), pp. 1-19. Available at: https://doi.org/10.1111/lnc3.12432 (Accessed: 27 August 2025).

Kalogiannidis, S., Kalfas, D., Papaevangelou, O., Giannarakis, G. and Chatzitheodoridis, F. (2024) 'The Role of Artificial Intelligence Technology in Predictive Risk Assessment for Business Continuity: A Case Study of Greece', *Risks*, *12*(2). Available at: https://doi.org/10.3390/risks12020019 (Accessed: 27 August 2025).

Rao, N.S. (2025) 'Rethinking risk management: the role of AI and big data in financial forecasting', *Annals of Corporate Responsibility*, 10(2), pp. 87–103. Available at: https://acr-journal.com/article/rethinking-risk-management-the-role-of-ai-and-big-data-in-financial-forecasting-890/ (Accessed: 27 August 2025).

Yazdi, M., Zarei, E., Adumene, S., & Beheshti, A. (2024) ,'Navigating the Power of Artificial Intelligence in Risk Management: A Comparative Analysis', *Safety*, *10*(2). Available at: https://doi.org/10.3390/safety10020042 (Accessed: 27 August 2025).