Unit 2 Seminar: User Participation in the Risk Management Process

a. Use of Qualitative and Quantitative Assessment Approaches in Spears & Barki (2010)

To investigate the role of user participation in the effectiveness of the Risk Management Process (RMP), Spears and Barki (2010) used qualitative and quantitative assessment methods. The qualitative method was in-depth interviews and thematic analysis to comprehend the perceptions of risk identification and risk mitigation among the participants(Shava and Vyas-Doorgapersad,2023). Therefore, this will help in establishing the contextual and behavioral aspects that fully influenced the user involvements. The quantitative component employed structured questionnaires and statistical modelling to estimate the correlations between the levels of user participation and the perceived improvements in system quality and risk mitigation effectiveness.

The qualitative helped in identifying how knowledge about the use of user engagement and how it promotes he aspect of ownership and communications(Brinson and Lemon,2023). Therefore, all the methods helped in improving the reliability of the study making the research more credible as quantifiable could be used to prove the required hypothesis.

b. Role of AI-Powered Data Analytics in Enhancing Risk Prediction and Business Continuity

AI-powered data analytics significantly improves risk prediction by processing vast datasets in real time to detect patterns, anomalies, and emerging threats that might elude human analysts. Machine learning (ML) models can identify correlations among variables affecting business operations, thereby supporting proactive decision-making and business continuity planning. predictive AI models enable organizations to forecast risks such as cybersecurity breaches, market volatility, and operational disruptions, ensuring timely preventive actions(Mujtaba and Yuille, 2024).

AI-driven predictive analytics facilitates scenario simulation and “what-if” analyses, supporting resilient business models. By integrating AI into the RMP, firms can move from reactive to anticipatory risk management, improving both accuracy and agility in dynamic environments (Polinati,2025).

c. Importance of Integrating Multiple AI Technologies in Risk Management

Relying solely on a single AI technology such as Natural Language Processing (NLP) limits the scope of risk detection and analysis. For instance, machine learning supports quantitative trend analysis, while NLP can extract qualitative insights from unstructured data such as reports and customer feedback(Țîrcovnicu, G.I. and Hațegan, C.D., 2023).

Moreover, hybrid AI systems improve interpretability and resilience by cross-verifying insights from multiple data sources. Integrating diverse AI tools enhances the Fair Information Assurance and Risk (FAIR) model by providing both qualitative insights (from NLP) and quantitative

probabilities (from ML and Bayesian reasoning)(Shkalenko and Nazarenko,2024).Such multi-technology integration ensures balanced, data-driven, and adaptive risk management strategies

References

Shava, E. and Vyas-Doorgapersad, S., 2023. Inclusive participation in information and communication technologies (ICTs) processes for smart services in the city of Johannesburg. *Insights into Regional Development*, *5*(1), pp.26-40.

Brinson, N.H. and Lemon, L.L., 2023. Investigating the effects of host trust, credibility, and authenticity in podcast advertising. *Journal of Marketing Communications*, *29*(6), pp.558-576.

Mujtaba, N. and Yuille, A., 2024. AI-Powered Financial Services: Enhancing Fraud Detection and Risk Assessment with Predictive Analytics. *Unpublished. DOI*, *10*.

Polinati, A.K., 2025. AI-Powered Anomaly Detection in Cybersecurity: Leveraging Deep Learning for Intrusion Prevention. *International Journal of Communication Networks and Information Security*, *17*(3), pp.301-323.

Țîrcovnicu, G.I. and Hațegan, C.D., 2023. Integration of artificial intelligence in the risk management process: An analysis of opportunities and challenges. *Journal of Financial Studies*, *8*(15), pp.198-214.

Shkalenko, A.V. and Nazarenko, A.V., 2024. Integration of AI and IoT into corporate social responsibility strategies for financial risk management and sustainable development. *Risks*, *12*(6), p.87